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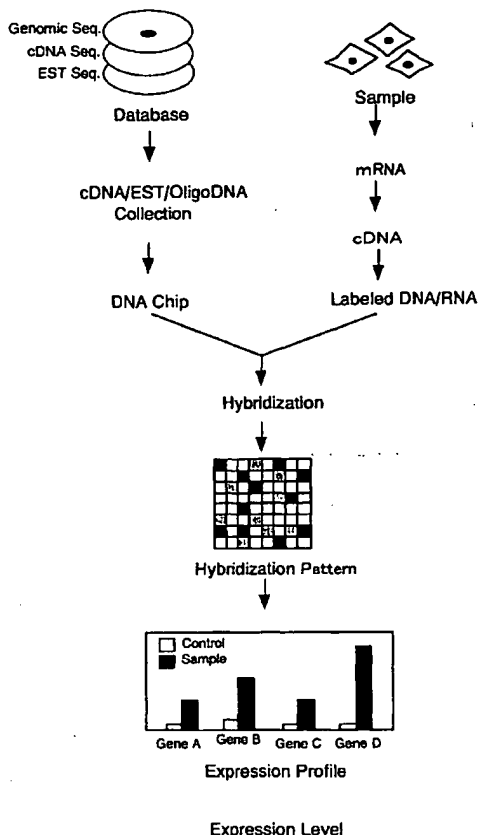
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(54) Title: **METHOD FOR EXAMINING ISCHEMIC CONDITIONS**



(57) Abstract: The present invention provides a method for examining ischemic conditions, comprising measuring the expression levels of particular genes in a test sample or determining the expression profile of a gene group in the sample comprising a plurality of genes selected from said particular genes.



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DESCRIPTION

METHOD FOR EXAMINING ISCHEMIC CONDITIONS

TEHCHNICAL FIELD

The present invention relates to a method for examining ischemic conditions by measuring the expression levels of particular genes in a test sample or by determining the expression profile of a gene group in the sample comprising a plurality of genes selected from the particular genes.

BACKGROUND ART

Cancer, cerebral apoplexy and heart diseases are called three major adult diseases and they occupy about 60% of the causes of death in the Japanese. Of these, cerebral apoplexy and heart diseases are often caused by ischemia. Thus, early detection of ischemic conditions makes it possible to prevent these diseases from occurring. Ischemia is local anemia and may be classified into groups such as compressive ischemia caused by constriction or occlusion in arterial walls due to external pressure from tumor or the like; occlusive ischemia caused by changes inside the blood vessels or in the blood vessels themselves such as thrombosis or arterial sclerosis; and vasospastic ischemia caused by vasospasms such as cerebral anemia or angina, from the viewpoint of the mechanism of its occurrence. Ischemia in the brain triggers ischemic cerebral apoplexy such as cerebral infarction, and ischemia in the heart triggers ischemic heart diseases such as myocardial infarction. Thus, for the prevention of these diseases, it is important, first of all, to find ischemic conditions as early as possible and to receive appropriate treatment.

As a method for examining ischemic conditions, a method in which abnormality in the cardiac wall movement is used as an indicator (e.g., quantitative analysis of ventricular forms/ultrasonic images, or detection of decrease in tissue systole speed); a method in which abnormality in hemodynamics is used as an indicator (e.g., analysis of the pattern of blood flow rate into the left ventricle, or nuclear medicine examination) and the like have been known to date. Among all, nuclear medicine examination is a method which can

examine ischemic conditions accurately. However, this method is disadvantageous to subjects because it involves exposure to radiation, requires a long time for examination, and is expensive. Under circumstances, a simple examination method for ischemic conditions has been desired which imposes less burden to subjects and can be carried out routinely as a part of health examination.

DISCLOSURE OF THE INVENTION

It is an object of the present invention to provide a method for examining ischemic conditions simply by measuring the expression levels of particular genes in a test sample or by determining the expression profile of a gene group in the sample comprising a plurality of genes selected from the particular genes.

As a result of intensive and extensive researches toward the solution of the above problems, the present inventors have succeeded in identifying those genes expressed under ischemic conditions and in elucidating the expression profile of the genes. Thus, the present invention has been achieved.

The present invention relates to a method for examining ischemic conditions, comprising measuring the expression levels of particular genes in a test sample or determining the expression profile of a gene group in the sample comprising a plurality of genes selected from the particular genes. Specific examples of the particular genes include (a) genes having any of the nucleotide sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066 or genes encoding any of the amino acid sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066; or (b) genes functionally equal to the genes having any of the above-described nucleotide sequences or genes functionally equal to the genes encoding any of the above-described amino acid sequences. The measurement of expression levels and the determination of expression profile may be carried out using a DNA chip (e.g., a synthetic-type DNA chip). Specific examples of the ischemic conditions include compressive ischemia, occlusive ischemia and vasospastic ischemia.

Further, the present invention relates to a DNA chip for examining ischemic conditions, which carries a part or all of the following genes (a) or (b) immobilized on its surface: (a) genes having any of the nucleotide sequences shown in SEQ ID NO: 1 through

SEQ ID NO: 1066 or genes encoding any of the amino acid sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066; or (b) genes functionally equal to the genes having any of the above-described nucleotide sequences or genes functionally equal to the genes encoding any of the above-described amino acid sequences. Specific examples of the ischemic conditions include compressive ischemia, occlusive ischemia and vasospastic ischemia.

Further, the present invention relates to a method of screening for ischemic condition-improving drugs or therapeutics for ischemic diseases. This method is characterized by selecting candidate drugs using as an indicator whether or not:

- (a) the expression levels of particular genes of which expression levels change under ischemic conditions return to a normal expression levels; or
- (b) the expression profile of a gene group comprising a plurality of the particular genes returns to a normal expression profile;

by the administration of a drug to a test animal or test cell, wherein the returning to the normal expression levels or normal expression profile indicates that the drug is a candidate drug. Specific examples of the particular genes include (a) genes having any of the nucleotide sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066 or genes encoding any of the amino acid sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066; or (b) genes functionally equal to the genes having any of the above-described nucleotide sequences or genes functionally equal to the genes encoding any of the above-described amino acid sequences. Specific examples of the ischemic conditions include compressive ischemia, occlusive ischemia and vasospastic ischemia.

Further, the present invention relates to a computer-readable record medium in which the following data (i) or (ii) have been recorded: (i) expression level data of particular genes of which expression levels change under ischemic conditions, or (ii) expression profile data of a gene group comprising a plurality of genes selected from the particular genes. Specific examples of the particular genes include (a) genes having any of the nucleotide sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066 or genes encoding any of the amino acid sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066; or (b) genes functionally equal to the genes having any of the above-described

nucleotide sequences or genes functionally equal to the genes encoding any of the above-described amino acid sequences. Specific examples of the ischemic conditions include compressive ischemia, occlusive ischemia and vasospastic ischemia.

Further, the present invention relates to a computer-readable record medium in which a program that directs a computer to execute the following procedures has been recorded:

- (a) procedures to input expression level data or expression profile data of particular genes in a test sample;
- (b) procedures to record the input data;
- (c) procedures to check the recorded data with already recorded expression level data or expression profile data of the particular genes under ischemic conditions;
- (d) procedures to determine whether the test sample is under ischemic conditions or not based on the checking results obtained in (c); and
- (e) if the test sample has been determined as being under ischemic conditions, procedures to identify the clinical stage of the ischemic conditions of the test sample based on the checking results obtained in (c). Specific examples of the particular genes include (a) genes having any of the nucleotide sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066 or genes encoding any of the amino acid sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066; or (b) genes functionally equal to the genes having any of the above-described nucleotide sequences or genes functionally equal to the genes encoding any of the above-described amino acid sequences. Specific examples of the ischemic conditions include compressive ischemia, occlusive ischemia and vasospastic ischemia.

Hereinbelow, the present invention will be described in detail.

The present specification encompasses the contents of the specification and drawings of Japanese Patent Application No. 2000-145977 based on which the present application claims priority.

The present invention relates to a unique method for examining ischemic conditions using, as an indicator, expression levels of particular genes or an expression profile of a particular gene group. The term "expression level" used herein refers to an absolute or

relative amount of the transcript (i.e., mRNA) of a particular gene; or an absolute or relative amount of the translation product (i.e., protein) of a particular gene. The term "expression profile" used herein refers to expression levels of a plurality of genes collected and arranged in tables, graphs, or the like.

1. Identification of Genes of which Expression Levels Change under Ischemic Conditions

Genes of which expression levels change under ischemic conditions may be identified by, for example, the differential RNA display method [Liang, P. et al., *Science* 257:967-971 (1992)], the hybrid subtraction method, or a method using a DNA chip. For example, a method of identifying the above genes using a DNA chip may be carried out as illustrated in Fig. 1. Briefly, a plurality of pieces of DNA information (cDNA/EST/oligoDNA collection) are obtained from a DNA database where genomic sequences, cDNA sequences or EST sequences have been recorded. Then, a wide variety of genes of known sequences are immobilized on a DNA chip. Subsequently, labeled DNA or RNA which has been prepared from mRNA derived from biosamples under ischemic conditions is hybridized with the DNA chip. The hybridization strength at each spot of the resultant hybridization pattern is then measured to thereby measure the expression level of each gene. Thus, an expression profile is obtained. Hereinbelow, a method using a DNA chip will be described in more detail.

(1) Preparation of Poly(A)+mRNA from Test Samples

First, poly(A)+mRNA must be prepared from test samples such as tissue or cell to examine expression levels of particular genes in the samples using a DNA chip. Specific examples of test samples useful for the preparation of poly(A)+mRNA to be used in the identification of genes of which expression levels change under ischemic conditions include biotissues (e.g., blood tissue, brain tissue, heart tissue or renal tissue) derived from experiment animals (e.g., mice, rats, guinea pigs, rabbits, dogs, cats, pigs or cows) in which ischemic conditions have been induced artificially or derived from humans under ischemic conditions. It is said that about 80% of genes which may be expressed in a living body are being expressed in the brain. Thus, by examining those genes of which expression levels

change in the brain under ischemic conditions, it is possible to comprehensively identify those genes of which expression levels change under ischemic conditions in tissues other than the brain. More specifically, the hippocampus derived from the above-described mice may be used as a test sample for preparing poly(A)+mRNA. Since cerebral capillaries exist in the hippocampus, blood cells such as erythrocytes, leukocytes and platelets are present there in a mixed state. Therefore, mRNAs from various blood cells may be contained in mixture in poly(A)+mRNA extracted from a hippocampus tissue.

Poly(A)+mRNA may be prepared by obtaining total RNA from test samples by such methods as the guanidine thiocyanate-cesium chloride method [J. Sambrook et al., *Molecular Cloning: A Laboratory Manual*, 2nd Ed., Cold Spring Harbor Laboratory Press, New York (1989)], the guanidine thiocyanate-cesium trifluoroacetate method [H. Okayama et al., *Methods in Enzymology*, 154:3, Academic Press, New York (1987)], the guanidine thiocyanate-phenol-chloroform method [P. Chomczynski et al., *Anal. Biochem.*, 162:156 (1987)] or the phenol-SDS method [R.D. Palmiter, *Biochemistry*, 13:3606 (1974)], loading the resultant total RNA to an oligo-dT cellulose or poly U Sepharose column for specific adsorption of poly(A)+mRNA, and then eluting the poly(A)+mRNA from the column. In particular, when the test sample is a tissue, it is important to perform purification processes accurately because the state of purification of the total RNA or poly(A)+mRNA greatly influences the yield of cDNA, etc.

For example, when poly(A)+mRNA is prepared by the guanidine thiocyanate-cesium chloride method, first, an appropriate amount (e.g., 5 volumes) of guanidine thiocyanate solution is added to a tissue sample. Then, the tissue sample is disrupted using, e.g., a Polytron homogenizer. Sodium N-lauroyl sarcosinate is added to the disrupted tissue to give a desired concentration (e.g., 0.5%) and agitated. The resultant sample is centrifuged (e.g., at 5000 xg for 10 min). The resultant supernatant is layered over a cushion of cesium chloride-EDTA contained in a centrifuge tube and subjected to ultracentrifugation (e.g., at 100,000 xg for 12 hr). The resultant precipitate is rinsed with 70% ethanol and then dissolved in TE buffer to thereby obtain total RNA. The resultant total RNA is applied to an oligo-dT cellulose column to thereby obtain poly(A)+mRNA.

Alternatively, the preparation of poly(A)+mRNA may be performed using

commercial kits. Specific examples of kits for preparing total RNA include RNeasy Total RNA Isolation kit (Qiagen) and TRIzol Reagent (Gibco BRL Life Technologies). Specific examples of kits for isolating poly(A)+mRNA from total RNA include Oligotex Direct mRNA kit (Qiagen) and Oligotex mRNA kit (Quiagen).

(2) Synthesis of cDNA with Reverse Transcriptase

Subsequently, cDNA is synthesized using the poly(A)+mRNA obtained in (1) above as a template. The synthesis of cDNA may be carried out according to the method of Gubler et al. [U. Gubler et al., *Gene* 25:263 (1987)]. Briefly, oligo(dT)₁₂₋₁₈ is added to a solution of poly(A)+mRNA, which is heated and then cooled quickly. To this solution, a single-stranded cDNA synthesis buffer, a dNTP solution (containing mixture of dATP, dGTP, dCTP and dTTP), a ribonuclease inhibitor solution, a dithiothreitol solution, etc. are added and mixed. Then, a reverse transcriptase (e.g., Superscript RT; BRL) is added to the mixture, which is then incubated for a specific period to thereby yield single-stranded cDNA. If necessary, double-stranded cDNA may be synthesized further using the single-stranded cDNA as a template. Briefly, a cDNA synthesis buffer, a dNTP solution (containing mixture of dATP, dGTP, dCTP and dTTP), a dithiothreitol solution, etc. are added to a solution of the single-stranded cDNA and mixed. Then, a DNA polymerase (e.g., T4 DNA polymerase) is added to the mixture, which is then incubated for a specific period to thereby yield double-stranded cDNA. Labeled cDNA may be obtained by using a labeled dNTP (e.g., biotin-labeled dNTP) in the synthesis of single- or double-stranded cDNA.

(3) Preparation of Labeled cRNA Fragments

When a DNA chip on which oligonucleotides are immobilized as DNA probes is used in the method of the invention, labeled cRNA is prepared, if necessary, by *in vitro* transcription using the cDNA obtained in (2) above as a template. The preparation of labeled cRNA by *in vitro* transcription may be carried out according to the method of Kreig et al. [Kreig, P.A. et al., *Methods in Enzymology* 155:397-415 (1987)]. The resultant labeled cRNA molecules must be fragmented before use. The fragmentation of these molecules may be performed by heating in the presence of Mg²⁺ (e.g., at 94°C for 3 min) or by treatment with DNase.

The *in vitro* transcription described above may also be performed using a commercial kit. As an example of *in vitro* transcription kit, MEGAscript™ *In Vitro* Transcription Kit (Ambion) may be given.

(4) Hybridization on a DNA Chip

Subsequently, the labeled nucleotide sample obtained in (2) or (3) above is added to a DNA chip to carry out a hybridization reaction. Specific examples of DNA chips useful in the method of the invention include oligoDNA microarray (also called "synthetic-type DNA chip") which is prepared by synthesizing oligoDNAs on a substrate directly, and DNA microarray (also called "paste-type DNA chip") which is prepared by immobilizing pre-synthesized DNAs on a substrate. In the present invention, it is preferable to use a synthetic-type DNA chip that can provide high detection sensitivity, accuracy and reproducibility (e.g., oligoDNA microarray GeneChip™ manufactured by Affymetrix) for identifying genes of which expression levels change under ischemic conditions.

In the examination of gene expression, it is important to carry out hybridization under high stringency conditions to inhibit non-specific bonding. The term "high stringency conditions" refers to those conditions under which hybridization only occurs between two nucleotide strands having 90% or more homology to each other. Stringency may be raised or lowered by changing salt concentrations (e.g., concentrations of NaCl, trisodium citrate) and/or the reaction temperature. The lower the salt concentrations are and the higher the temperatures is, the higher the stringency becomes. Depending on the type of DNA chip used and other factors, a specific temperature and specific salt conditions may be high stringency conditions or low stringency conditions. Thus, high stringency conditions and low stringency conditions should be decided for each chip to be used. With respect to GeneChip™ Mu6500 used in the present invention, high stringency conditions refer to reaction temperatures ranging from 43 to 65°C, preferably 45°C, and Na⁺ concentrations ranging from 500 to 1000 mM, preferably 1000 mM.

(5) Detection and Data Analysis

The double-strands formed on the microarray as a result of the hybridization are analyzed with a fluorescence image scanner or the like. The fluorescence intensities may be measured automatically with a system integrating a fluorescent laser microscope, a CCD

camera and a computer. Preferably, a scanner is used which is capable of quantitatively discriminating spots having a size of several ten micrometers and having a distance of approx. 10 μ m between every two spots. Further, it is preferable that the scanner be capable of handling a plurality of labels and scanning over a wide range at a high speed, and that the scanner be equipped with an automatic focusing function which allows the scanner to manage microscopic distortion in the substrate. As a specific example of a scanner equipped with such a function, GMS 418 Array Reader (Genetic MicroSystems) may be given. The software to be used for the analysis of the above data is, preferably, capable of performing complicated analysis of a large number of oligonucleotides with partially overlapped sequences, such as analysis of mutation or polymorphism.

Alternatively, a commercial system may be used in the present invention which is integrating a set of components necessary for gene analysis using a DNA chip. These components include (i) a DNA chip, (ii) a device for automatically washing and staining the DNA chip after hybridization, (iii) a scanner which reads fluorescence emission, and (iv) a work station which processes and analyzes the information read. As a specific example of such a system, the GeneChip™ analysis system created by Affimetrix may be given. This system is provided with GeneChip™ Laboratory Information Management System (LIMS™) and GeneChip™ Expression Data Mining Tool (EDMT™) as bioinformatics tools for efficient utilization of obtained genetic data. These tools make it possible to output obtained data to SQL compliant databases of GATC (Genetic Analysis Technology Consortium) format to thereby link the system to public genetic information databases on the web. By using this analysis system, more efficient and more extensive data analysis can be made.

The nucleotide sequences of those genes which have been found by the present invention to show altered expression levels under ischemic conditions in mouse, and the amino acid sequences encoded by those genes are shown in SEQ ID NO: 1 through SEQ ID NO: 1066. Since both mouse and human belong to mammals, they are highly similar to each other genetically. Thus, genes which are functionally equivalent to the genes having the nucleotide sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066 or the genes encoding the amino acid sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066

may exist in human cells. Accordingly, by measuring expression levels of such human genes, it is possible to perform examination of ischemic conditions on human-derived samples. The term "functionally equivalent genes" used herein includes, in addition to the genes consisting of any of the nucleotide sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066 themselves or the genes encoding any of the amino acid sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066 themselves, those genes which have homology to the above genes and play roles identical or similar to the roles of the above genes in the living body. Nucleotide sequence information, amino acid sequence information, etc. on those genes in human cells which are functionally equivalent to mouse-derived genes can be obtained from known databases such as GenBank by searching with keywords such as a part of nucleotide sequence of interest, a part of amino acid sequence of interest, or a gene product name.

It is possible to identify ischemia marker genes of which expression levels change specifically under ischemic conditions. This identification can be performed by further examining the expression levels under other diseases of the above-described genes which were found to show altered expression levels under ischemic conditions.

2. DNA Chips for Examining Ischemic Conditions

DNA chips carrying as DNA probes a part or all of the genes identified in Section 1. above (which show altered expression levels under ischemic conditions) immobilized on their substrates can be used as a DNA chip for examining ischemic conditions. In particular, a DNA chip as shown in Fig. 2 on which three groups of genes (i.e., genes showing high expression levels under ischemic conditions; genes showing moderate expression levels under ischemic conditions; and genes showing low expression levels under ischemic conditions) are located separately may be used as a DNA chip that is capable of evaluating the extent of progress of ischemic conditions. There are two types of DNA chips. One is paste-type chips prepared by immobilizing pre-synthesized DNA probes on their substrates; and the other is synthetic-type chips prepared by synthesizing DNA probes on their substrates directly. The term "DNA probes" used herein refers to DNA strands which are immobilized on the substrate of a DNA chip in order to detect those

genes having DNA strands with specific nucleotide sequences. Hereinbelow, processes for preparing both types of DNA chips will be described specifically.

(1) Method of Preparing Paste-Type DNA Chips

First, as DNA probes, a part or all of the genes identified in Section 1. above which show altered expression levels under ischemic conditions are prepared by PCR or chemical synthesis. DNA probes must be present on the substrate of a DNA chip as single-stranded DNAs so that they can hybridize with target nucleotide strands having sequences complementary to the sequences of the DNA probes when the target strands access to the DNA probes. Thus, in designing DNA probes, it is desirable to select sequences so that formation of secondary structures that would inhibit the hybridization with target nucleotide strands will occur as little as possible. The term "secondary structures" used herein refers to the stem-loop structure, hairpin structure or the like which is formed by hybridization of a part of a probe with another part of the same probe when the probe has been folded back. Whether sequences of interest would form secondary structures or not can be analyzed using a commercial gene analysis software (e.g., DNASIS; Hitachi Software Engineering).

The preparation of DNA probes by PCR may be carried out by conventional methods [see, for example, Sambrook, J. et al., *Molecular Cloning: A Laboratory Manual*, 2nd Ed., Cold Spring Harbor Laboratory Press (1989)] using, as a template, genomic DNA, total RNA, mRNA or cDNA derived from an organism to be tested. For example, the gene consisting of the nucleotide sequence shown in SEQ ID NO: 1006 can be used as a marker for examining ischemic conditions since its expression increases remarkably under ischemic conditions. A DNA probe to detect this gene may be obtained by PCR using sense primer 5'-atgctcttccgagctgtgct-3' (SEQ ID NO: 1067), anti-sense primer 5'-cagctcagttgaacgccttt-3' (SEQ ID NO: 1068) and, as a template, cDNA prepared from mRNA derived from mouse hippocampus under ischemic conditions. Whether the amplified fragment by PCR is the fragment of interest or not may be determined by subcloning the amplified fragment into an appropriate vector such as pBlueScriptSK(+) (Stratagene) or pCR2.1 (Invitrogen) and then determining the nucleotide sequence thereof. The nucleotide sequence may be determined by conventional methods such as the chemical modification method by Maxam-Gilbert or

the dideoxynucleotide chain termination method using M13 phage. Usually, the nucleotide sequence may be determined using an automated DNA sequencer (e.g., 373A DNA sequencer; Perkin-Elmer).

On the other hand, the preparation of DNA probes by chemical synthesis may be carried out according to conventional DNA synthesis methods used in the art, e.g., the phosphoramidite method, or the phosphonate method. For example, when DNA probes are synthesized by the phosphoramidite method, a nucleoside derivative obtained by introducing a trivalent phosphoramidite residue into the hydroxyl group at 3'-position of the sugar moiety is used as a synthesis unit. First, this amidite unit is activated with 1H-tetrazol and reacted with the 5'-hydroxyl of a DNA strand on a solid phase (step 1), to thereby yield a trivalent phosphite ester. Subsequently, the trivalent phosphite ester is led to a pentavalent phosphate triester through oxidation (step 2), capping (step 3) and hydrogenation (step 4). Then, steps 1 to 4 are repeated. Finally, an oligomer block having the desired nucleotide sequence is cleaved from the solid phase and deprotected to thereby yield the DNA strand of interest.

Subsequently, the thus obtained DNA probe is immobilized on the substrate of a DNA chip. Specific examples of substrates useful for this purpose include glass sheets, quartz sheets and silicone wafers. As a size of the substrate, 3.5 mm x 5.5 mm, 18 mm x 18 mm or 22 mm x 75 mm may be used, for example. This size may be varied appropriately depending on, for example, the number and size of spots of DNA probes on the substrate. As to a method for immobilizing DNA, DNA may be electrostatically bound to a solid support that has been surface-treated with a polycation such as polylysine, polyethyleneimine or polyalkylamine, utilizing the electric charge of the DNA; or DNA probes into which a functional group such as amino group, aldehyde group, SH-group or biotin has been introduced may be covalently bound to the surface of a solid support into which a functional group such as amino group, aldehyde group or epoxy group has been introduced.

The spotting of DNA probes on the substrate may be performed using an arrayer which is capable of quantitatively spotting DNA probes in sizes ranging from several ten micrometers to several hundred micrometers and at pre-determined locations. As to the

technology of spotting, pin technology utilizing the mechanical contact of pin tips with a solid support; inkjet technology utilizing the principle of inkjet printer; or capillary technology utilizing a capillary device may be enumerated.

(2) Method for Preparing Synthetic-Type DNA Chips

As a method for synthesizing DNA probes on a substrate directly, the method of Fodor et al. may be used in which photolithographic fabrication techniques are combined with solid phase DNA synthesis techniques [Fodor, S.P.A. et al, Science 251:767-773 (1991)]. Briefly, a synthetic linker having a protective group removable by a photochemical reaction is bound onto a substrate. Then, the substrate is illuminated by light through a blocking material called mask to thereby remove only those protective groups in specific areas. Subsequently, the substrate is reacted with nucleotides having protected hydroxyl groups. As a result, polymerization occurs only in those areas where protective groups have been removed. Then, the substrate is illuminated by light through another mask, and polymerization of nucleotides is repeated. Thus, coupling reactions with different nucleotide precursors are repeated using various masks. As a result, DNA probes of desired sequences can be synthesized on specific areas on the substrate of a DNA chip. An oligonucleotide N-mer in nucleotide length can be synthesized by $N \times 4$ cycles of reaction. Thus, a DNA probe 25-mer in length can be synthesized by $25 \times 4 = 100$ cycles of reaction. The nucleotide length of the DNA probes on the DNA chip of the invention for examining ischemic conditions is 10- to 30-mer, preferably 15- to 25-mer.

Since the nucleotide length of DNA probes on DNA chips of this type is usually short, the specificity of hybridization on such chips may be questioned. This problem can be solved as described below. Briefly, in order to detect the expression of a particular gene, perfect match (PM) (i.e., completely complementary) oligonucleotide DNA probes corresponding to a plurality of portions (usually, ten and several portions) of the target gene and an identical number of mismatch (MM) oligonucleotide DNA probes having a mutation at one nucleotide (usually, the central nucleotide or neighboring nucleotide) are located on a substrate (see Fig. 3). Then, hybridization is carried out on the substrate using the MM probes as an indicator of the specificity of hybridization. That is, signal ratio of PM probes to MM probes is calculated, and the pseudo-positive signal is

eliminated.

3. Method of the Invention for Examining Ischemic Conditions

Ischemic conditions can be examined by measuring the expression levels in a test sample of the genes which were revealed in the present invention to show altered expression levels under ischemic conditions. Alternatively, ischemic conditions can be examined by determining the expression profile of a gene group comprising a plurality of genes selected from the above-described genes. The expression "determining the expression profile of a gene group" means measuring the expression levels of individual genes constituting the group and arranging the results in tables, graphs, or the like. Specific examples of the ischemic conditions include compressive ischemia, occlusive ischemia and vasospastic ischemia.

By measuring the expression levels in a test sample of the genes identified in Section 1. above which show altered expression levels under ischemic conditions, it is possible to examine whether the test sample is under ischemic conditions or not. Briefly, when the expression levels of the above genes in the test sample are changed to the same extent as the expression levels under ischemic conditions revealed by the present invention are changed, then the test sample can be evaluated as being under ischemic conditions. For example, the expression levels of the genes having the nucleotide sequences shown in SEQ ID NOS: 960-1037 and SEQ ID NOS: 1065-1066 or the genes encoding the amino acid sequences shown in SEQ ID NOS: 960-1037 and SEQ ID NOS: 1065-1066 increase more than 10-fold under ischemic conditions. Thus, when the expression levels of these genes are increased more than 10-fold in a test sample, the test sample can be evaluated as being under ischemic conditions.

Further, it is possible to more accurately examine whether a test sample is under ischemic conditions or not by measuring the expression levels of ischemia marker genes, which are genes included in the genes identified in Section 1. above and show little or no changes in expression levels in diseases other than ischemia. That is, when the changes in the expression levels of the above marker genes in a test sample are the same in extent as the changes in the expression levels of those genes detected in the present invention, the test

sample can be evaluated as being under ischemic conditions.

The expression levels of the above genes may be measured by, for example, dot hybridization, slot hybridization, Northern hybridization or quantitative PCR when the number of genes to be measured is small. When the number of genes to be measured is large, their expression levels may be measured with a DNA chip.

Further, it is possible to examine with higher accuracy whether a test sample is under ischemic conditions or not by determining the expression profile of a gene group in the sample comprising a plurality of genes selected from the genes identified in Section 1. above which show altered expression levels under ischemic conditions and comparing the resultant profile with an expression profile of a normal sample which is not under ischemic conditions. The determination of expression profiles of gene groups can be performed more quickly and simply by using DNA chips. Expression profiles may be classified using cluster analysis described later. As to the DNA chip, it is preferable to use synthetic-type DNA chips from the viewpoints of accuracy, sensitivity and reproducibility. It is also possible to perform examination of ischemic conditions using the DNA chip of the invention prepared in Section 2. above. For example, as shown in Fig. 2A, genes are classified into a group of low expression level genes, a group of moderate expression level genes, and a group of high expression level genes and immobilized separately on a DNA chip for hybridization. Low expression level genes mean those genes of which transcription levels increased n -fold (where n is 2 or more but less than 5) within 24 hours when the transcription level at 0 hour is taken as 1. Moderate expression level genes mean those genes of which transcription levels increased n -fold (where n is 5 or more but less than 10). High expression level genes mean those genes of which transcription levels increased more than 10-fold.

In order to prepare a DNA chip carrying immobilized genes thereon which show altered expression levels under ischemic conditions, for example, 300 or more low expression level genes, 100-300 moderate expression level genes and 30-100 high expression level genes are selected from the genes having the nucleotide sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066 or the genes encoding the amino acid sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066, and immobilized. When

the expression levels of the 30-100 high expression level genes have been changed compared with a gene expression profile obtained from a non-ischemic patient (control), the test sample can be judged under ischemic conditions of early-stage (Fig. 2B). When not only the expression levels of high expression level genes but also those of the 100-300 moderate expression level genes have been changed, the sample can be judged under ischemic conditions of intermediate-stage (Fig. 2C). Further, when the expression levels of the 300 or more low expression level genes have been changed in addition to those of the high expression level genes and the moderate expression level genes, the test sample can be evaluated under ischemic conditions of late-stage (Fig. 2D).

Expression levels may change toward increase or decrease compared to normal levels. However, the expression levels of all of the genes having the nucleotide sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066 or the genes encoding the amino acid sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066 change toward increase under ischemic conditions. Thus, in examining ischemic conditions using changes in the expression levels of the above genes as an indicator, a gene should be counted as having shown a change in its expression level only when an increase is observed in the expression level.

With respect to those genes which have been confirmed to show no change in expression levels under ischemic conditions, it is also possible to measure their expression levels and utilize the results for examining ischemic conditions. Briefly, the expression levels of such genes are measured in the test samples which were evaluated as ischemic as a result of the above-described measurement. If no change is observed in their expression levels, the reliability of the above evaluation that the test samples are under ischemic conditions can be enhanced.

4. Computer-Readable Record Medium Containing Gene Expression Data under Ischemic Conditions and Ischemic Condition Identification Program, as well as Ischemic Condition Identification Program

Expression level data of the genes which were revealed by the invention to show altered expression levels under ischemic conditions or expression profile data of a gene group comprising a plurality of genes selected from the above genes may be recorded in an

appropriate medium and used as comparison data in the analysis of examination data on ischemic conditions. As a record medium, any type of record media may be used, e.g., magnetic tape, CD-ROM, IC card, or RAM. Specifically, the degree of change in the expression levels of those genes of which expression levels change remarkably under ischemic conditions is examined in a test sample. If the expression levels are equal to the expression levels recorded in a record medium, the test sample (and thus the organism from which the sample is derived) can be evaluated as being under ischemic conditions. Further, more accurate evaluation of ischemic condition can be made by comparing a gene expression profile recorded (which was created from individual expression level data of a group of genes whose expression levels change under ischemic conditions) with an expression profile of corresponding genes in a test sample. That is, if the expression patterns in a test sample of a plurality of particular genes whose expression levels change under ischemic conditions resemble the expression patterns of the corresponding genes recorded in such a medium, the test sample can be evaluated as being under ischemic conditions with higher probability.

A record medium in which a program that directs a computer to execute the procedures described below has been recorded is useful as a record medium containing ischemic condition identification program. The term "ischemic condition identification program" used herein refers to a program that is able to identify the stage of ischemic conditions (i.e., early stage, intermediate stage or late stage) in a test sample when the test sample has been suspected to be under ischemic conditions or evaluated as being under such conditions. This program comprises (a) procedures to input expression level data or expression profile data of a test sample; (b) procedures to record the input data; (c) procedures to check this recorded data with already recorded expression level data or expression profile data under ischemic conditions; (d) procedures to determine whether the test sample is under ischemic conditions or not based on the checking results obtained in (c); and (e) if the test sample has been determined as being under ischemic conditions, procedures to identify the clinical stage of the ischemic conditions of the test sample based on the checking results obtained in (c). By analyzing the gene expression data of a test sample using a computer in which the above-described program has been installed, ischemic

conditions can be identified.

The ischemic condition identification program of the invention comprises (a) means for analyzing expression levels of genes isolated from test cells; and (b) means for predicting whether or not individual test samples are under ischemic conditions or not, using the analysis results obtained by (a) as an indicator. The analysis means (a) is composed of means for detecting individual expression levels of a plurality of genes in test cells or tissues (also called "detection engine"), and means for analyzing the resultant values detected (also called "analysis engine").

(1) Detection Engine for Gene Expression

In the present invention, when expression of genes has been detected, the detection data may be digitalized and used as digital information. The digitalization is performed by converting, for example, fluorescence intensities detected on DNA chips into numerical values.

(2) Analysis Engine

Analysis engine is a means for performing analysis processing by multivariate analysis such as cluster analysis, based on the data (i.e., amounts of gene expression) obtained by the detection engine. Cluster analysis, which is a technique used in the field of multivariate analysis, collects and classifies "similar objects" from a large number of objects (i.e., samples) to be observed based on specific calculation criteria (assessment criteria). In other words, cluster analysis merely "classifies" a large number of samples observed by putting samples similar to each other into one group.

In order to perform cluster analysis based on the detection data, "distance matrices" that represent similarities between samples are created. As the distance, Euclidean distance, weighted Euclidean distance, standard Euclidean distance, Pearson's product-moment correlation coefficient, or the like is calculated. The concepts of these distances are known, and an appropriate distance may be selected depending on the purpose of cluster analysis. Based on the concept of the above-mentioned distance, distances between clusters or distances between a cluster and objects are calculated, followed by amalgamation of clusters (i.e., two clusters are linked together). Methods of

amalgamation are known, e.g., the nearest neighbor method, furthest neighbor method, centroid method, or Ward's method.

By the above-described procedures, clusters which are in the "shortest distance" relation are linked together as "similar" clusters to thereby generate new clusters of a higher level. When clusters at one level have been generated, distances between clusters are calculated again to create distance matrices. Then, by searching for two clusters at the shortest distance, new clusters at a higher level are generated. Thus, a dendrogram is created finally.

Samples within a cluster amalgamated at a specific level of a dendrogram are contained in that cluster because of some similarity. Those samples with such similarity can be said to possess a certain nature in common. By elucidating this nature, it is possible to reveal the characteristic of the cluster itself. Thus, according to these analysis procedures, it is possible to classify genes into a group of high expression genes and a group of low expression genes. For example, if focusing on the degree of ischemic conditions using the progress (stage) of ischemia as an indicator, it is possible to reveal such characteristics that samples belonging to one cluster are under highly ischemic conditions and that samples belonging to the other cluster are under lightly ischemic conditions.

One embodiment of the identification system of the invention is illustrated in a block diagram (Fig. 5).

The identification system shown in Fig. 5 is equipped with CPU 501, ROM 502, RAM 503, Input Unit 504, Sending/Receiving Unit 505, Output Unit 506, Hard Disk Drive (HDD) 507 and CR-ROM Drive (508).

CPU 501 controls the ischemic condition identification system entirely and executes the examination processing described below according to the programs stored in ROM 502, RAM 503 or HDD 507. ROM 502 contains programs, etc. that instruct processing necessary for the operation of the above system. RAM 503 contains those data necessary for executing the examination processing. The Input Unit 504 is composed of a keyboard, mouse, etc. and operated, e.g., for inputting necessary conditions for the execution of the examination processing. The Sending/Receiving Unit 505 executes, based on instructions

from CPU 501, the sending/receiving of data to/from External Database 510, etc. through communication circuits. The Output Unit 506 executes display processing of various conditions input from the Input Unit 504, detection data on expressed genes, etc. based on instructions from CPU 501. The Output Unit 506 may include a computer-display unit and a printer. HD 507 contains information of expression patterns of various genes in cells or tissues and, based on instructions from CPU 501, reads out stored programs or data and stores them, e.g., in RAM 503. Based on instructions from CPU 501, CR-ROM Drive 508 reads out programs or data from the identification program stored in CD-ROM 509 and stores them, e.g., in RMA 503.

CPU 501 executes prediction of whether individual test samples are under ischemic conditions or not based on the data received from the Database, while supplying data received from the Input Unit, etc. to the Output Unit 506. The Database contains accumulated information of the amounts of gene expression (including both absolute amounts and relative amounts) obtained as described above.

Fig. 6 is a flow chart showing an example of identification processing using the identification program described above. Expression patterns of genes in test samples are analyzed, followed by identification of whether individual samples are under ischemic conditions or not.

Hereinbelow, the identification processing will be described with reference to Cluster Analysis Device 601 in Fig. 6. Cluster Analysis Device 601 generates clusters to be used in the identification processing. First, gene expression data are input by Means for External Database Searching and Data Input 602. Until data input is completed, input operation of the above data is repeated. By the input of the above data, information obtained from each tissue or cell is stored in Sample Data Storage Means 603, and supplied for cluster analysis or registered in the database.

Subsequently, Data Optimizing Means 604 inputs sample data from Sample Data Storage Means 603 and optimizes the data for cluster analysis. Data optimization is performed using a method most suitable for the sample, e.g., normalization with median values, normalization with z-scores, setting the maximum and the minimum values, or log transformation.

Means for Outputting List of Variables 605 displays a list of variables in the sample data to be subjected to cluster analysis.

Subsequently, using the function of Variable Selection Means 606, a user selects variables from the variables displayed by Means for Outputting List of Variables 605.

The selection of variables by Variable Selection Means 606 allows free selection of a single or a plurality of particular variables. Since, usually, there are a large number of candidates for variables, the Means 606 allows the user selection of any variables from them.

Once the user has selected particular variables, this information is input into Means for Generating Sample Data Files for Identification 607 together with sample data. Then, sample data files for identification is generated by this Generating Means 607.

Subsequently, the resultant data files of clusters are sent to Identification Means 608, which evaluates the degree of separation of clusters. The evaluation formula to evaluate the degree of separation of clusters may be defined in various manners.

The results of evaluation of the degree of separation made by the Identification Means 608 are passed to Means for Classifying Clusters 609. Then, the Classifying Means 609 inputs the identification results by the Identification Means 608 and decides most appropriate cluster classification referring to the identification conditions set in Means for Setting Identification Conditions 612. If conditions for continuation/termination of cluster classification have been set, the Classifying Means 609 judges the continuation or termination of cluster classification. If conditions for continuation/termination of cluster classification have not been set, the Classifying Means 609 allows the user to judge the continuation or termination of cluster classification. If the Classifying Means 609 has decided to continue cluster classification, it outputs the most appropriate cluster classification obtained from the processing of that time and a signal announcing that cluster classification is continued. This signal will work later as an instruction that processing of cluster classification must be returned to the Means for Outputting List of Variables 605 after the processing by Means for Editing Dendrograms 611.

On the other hand, if the Classifying Means 609 has decided to terminate cluster classification, it specifies the most appropriate cluster at that stage and outputs a signal

announcing that cluster classification is terminated. This signal will work later as an instruction to terminate the processing of cluster classification after the processing by Means for Editing Dendrograms 611.

After completion of the processing by the Classifying Means 609, the processing by Means for Generating Dendrograms 610 starts. The Generating Means 610 inputs the cluster classification decided by the Classifying Means 609, and displays a dendrogram based on the above cluster classification and characters of the variables pertaining to the cluster classification. When the Generating Means 610 has generated this cluster classification dendrogram, the user becomes able to grasp the current state of cluster classification visually. While generating the dendrogram, the Generating Means 610 displays the amounts of gene expression which are basis for the generation of the dendrogram so that the user can grasp the amounts visually. Then, Means for Editing Dendrograms 611 allows the user on the screen of a display device to edit (i.e., make additions, changes, or deletions to) the dendrogram generated by the Generating Means 610. The addition, change, or deletion of cluster classification is performed by the user with a processing instruction input device on the screen. For example, certain clusters may be designated, and variables of clusters to be classified further at a lower level may be indicated; or a plurality of clusters may be amalgamated. Alternatively, branches of a certain cluster classification may be deleted. While providing various tools to support the user's editing operation, Means for Editing Dendrograms 611 reads the meaning of the user's editing operation and automatically corrects data files of individual clusters accordingly. Furthermore, Means for Editing Dendrograms 611 preferably presents the judgment of Cluster Classifying Means 609 to continue or terminate the cluster classification and allows the user to input his/her final decision.

If it is decided that repeated processing of cluster classification should be continued, the processing is returned to Means for Outputting List of Variables 605. Then, the above-described processing performed by Means for Outputting List of Variables 605 through Means for Editing Dendrograms 611 is repeated.

From the thus analyzed data, whether the test samples are under ischemic conditions or not can be judged by checking into which cluster (i.e., ischemic cluster or normal cluster)

they have been classified.

5. Method of Screening for Ischemic Condition-Improving Drugs or Therapeutics for Ischemic Diseases

It is possible to screen for ischemic condition-improving drugs or therapeutics for ischemic diseases using as an indicator the expression levels of the genes which were revealed in the invention to show increased expression levels under ischemic conditions. Briefly, (a) whether or not the expression levels of the above genes return to their expression levels in a normal tissue, or (b) whether or not the expression profile of a gene group comprising a plurality of above genes returns to the normal expression profile in a normal tissue, by the administration of a drug to a test animal or test cell is examined. When the expression levels of the above genes have returned to their expression levels in a normal tissue as a result of the administration of the drug, the drug is evaluated as a candidate substance for an ischemic condition-improving drug or therapeutic for ischemic diseases.

BRIEF DESCRIPTION OF DRAWINGS

Fig. 1 shows procedures to identify genes of which expression levels change under ischemic conditions using a DNA chip.

Fig. 2 shows one embodiment of the DNA chip of the invention for examining ischemic conditions, and predicted results when test samples from patients have been hybridized on the DNA chip.

Fig. 3 shows one embodiment of synthetic-type DNA chip and procedures to detect genes in a test sample using the DNA chip.

Fig. 4 shows procedures to measure the expression levels of genes using GeneChip™.

Fig. 5 is a block diagram showing an ischemic condition identification system.

Fig. 6 is a flow chart showing an example of processing by an ischemic condition identification program.

Legend

501: CPU; 502: ROM; 503: RAM, 504: Input Unit; 505: Sending/Receiving Unit; 506: Output Unit; 507: HDD, 508: CD-ROM Drive; 509: CD-ROM; 510: Database; 601: Cluster Analysis Device; 602: Means for External Database Searching and Data Input; 603: Sample Data Storage Means; 604: Data Optimizing Means; 605: Means for Outputting List of Variables; 606: Variable Selection Means; 607: Means for Generating Sample Data File for Evaluation; 608: Evaluation Means; 609: Means for Classifying Clusters; 610: Means for Generating Dendrograms; 611: Means for Editing Dendrograms; 612: Means for Setting Evaluation Conditions.

BEST MODE FOR CARRYING OUT THE INVENTION

Hereinbelow, the present invention will be described more specifically with reference to the following Example, which should not be construed as limiting the scope of the invention.

Example 1. Identification of Genes Expressed under Ischemic Conditions using a DNA Chip

Genes expressed under ischemic conditions were identified by the procedures as shown in Fig. 4 using GeneChip System™ (Affymetrix). Briefly, 8-10 week-old bcl BLACK mice were anesthetized with inplane. Then, the carotid artery on both sides was exposed and ligated for 20 min to block the blood flow to thereby generate ischemic conditions in mice. Then, the blood flow was restored, and mice were slaughtered at 0, 2, 6, 12 and 24 hours after the blood flow restoration. The hippocampus on both sides was removed and immediately stored frozen. Subsequently, approximately 2 μ g of poly(A)+mRNA was extracted from 1 g of a frozen sample. Then, cDNA was synthesized with a reverse transcriptase. The resultant cDNA was transcribed *in vitro* to thereby obtain biotin-labeled cRNA, which was treated with heat in the presence of Mg^{2+} for fragmentation into about 50-mer fragments. Internal reference was labeled and added to the sample. Then, the sample was poured into GeneChip™ Mu6500 (Affymetrix). After hybridization in an oven, the chip was washed in Fluidic station. Then, information of the chip was read by a GeneArray scanner. The data obtained was processed and analyzed using a

bioinformatics system. The results are shown in Tables 1 through 3. Table 1 shows genes of which transcription levels increased n-fold where n is 2 or more but less than 5 within 24 hours when the transcription level at 0 hour is taken as 1. Table 2 shows genes of which transcription levels increased n-fold where n is 5 or more but less than 10. Table 3 shows genes of which transcription levels increased more than 10-fold. The accession numbers refers to GenBank accession numbers.

Table 1.

Genes of Which Transcription Levels Increased n-Fold ($2 \leq n < 5$)

ACCESSION NO.	SEQ ID NO. (Nucleotide Sequence)	SEQ ID NO. (Amino Acid Sequence)	ACCESSION NO.	SEQ ID NO. (Nucleotide Sequence)	SEQ ID NO. (Amino Acid Sequence)
M77167	SEQ ID NO.1	SEQ ID NO.2	AA103541	SEQ ID NO.465	—
AA068780	SEQ ID NO.3	—	U41736	SEQ ID NO.466	SEQ ID NO.467
M33212	SEQ ID NO.4	SEQ ID NO.5	AA103768	SEQ ID NO.468	—
D76440	SEQ ID NO.6	SEQ ID NO.7	U43900	SEQ ID NO.469	SEQ ID NO.470
M35131	SEQ ID NO.8	SEQ ID NO.9	AA140170	SEQ ID NO.471	—
AA050852	SEQ ID NO.10	—	AA104086	SEQ ID NO.472	—
W47946	SEQ ID NO.11	—	U43512	SEQ ID NO.473	—
W48104	SEQ ID NO.12	—	AA104459	SEQ ID NO.474	—
U09928	SEQ ID NO.13	—	U39545	SEQ ID NO.475	SEQ ID NO.476
M29464	SEQ ID NO.14	SEQ ID NO.15	U64445	SEQ ID NO.477	SEQ ID NO.478
X61434	SEQ ID NO.16	—	D86949	SEQ ID NO.479	SEQ ID NO.480
M90316	SEQ ID NO.17	SEQ ID NO.18	Z70023	SEQ ID NO.481	SEQ ID NO.482
M94632	SEQ ID NO.19	SEQ ID NO.20	U71202	SEQ ID NO.483	SEQ ID NO.484
W41501	SEQ ID NO.21	—	X81059	SEQ ID NO.485	SEQ ID NO.486
M20632	SEQ ID NO.22	SEQ ID NO.23	U73200	SEQ ID NO.487	SEQ ID NO.488
M13521	SEQ ID NO.24	—	U69270	SEQ ID NO.489	SEQ ID NO.490
M21285	SEQ ID NO.25	—	AA106077	SEQ ID NO.491	—
M96163	SEQ ID NO.26	—	AA106116	SEQ ID NO.492	—
X04017	SEQ ID NO.27	SEQ ID NO.28	U31758	SEQ ID NO.493	SEQ ID NO.494
M64086	SEQ ID NO.29	SEQ ID NO.30	AA106224	SEQ ID NO.495	—
W54584	SEQ ID NO.31	—	X80502	SEQ ID NO.496	SEQ ID NO.497
L12447	SEQ ID NO.32	SEQ ID NO.33	U76832	SEQ ID NO.498	SEQ ID NO.499
X62622	SEQ ID NO.34	SEQ ID NO.35	U30840	SEQ ID NO.500	SEQ ID NO.501
Z30970	SEQ ID NO.36	SEQ ID NO.37	AA107388	SEQ ID NO.502	—
M23568	SEQ ID NO.38	SEQ ID NO.39	U26459	SEQ ID NO.503	SEQ ID NO.504
J03520	SEQ ID NO.40	SEQ ID NO.41	U29055	SEQ ID NO.505	SEQ ID NO.506
M94087	SEQ ID NO.42	SEQ ID NO.43	U39302	SEQ ID NO.507	SEQ ID NO.508
L37092	SEQ ID NO.44	SEQ ID NO.45	U77630	SEQ ID NO.509	SEQ ID NO.510
M22479	SEQ ID NO.46	SEQ ID NO.47	U39473	SEQ ID NO.511	SEQ ID NO.512

AA041634	SEQ ID NO.48	—	X91043	SEQ ID NO.513	SEQ ID NO.514
M95200	SEQ ID NO.49	SEQ ID NO.50	D86603	SEQ ID NO.515	SEQ ID NO.516
M62867	SEQ ID NO.51	SEQ ID NO.52	D88792	SEQ ID NO.517	SEQ ID NO.518
AA137883	SEQ ID NO.53	—	D88793	SEQ ID NO.519	SEQ ID NO.520
L36611	SEQ ID NO.54	—	D38218	SEQ ID NO.521	SEQ ID NO.522
L19311	SEQ ID NO.55	SEQ ID NO.56	U60330	SEQ ID NO.523	SEQ ID NO.524
X74438	SEQ ID NO.57	SEQ ID NO.58	AA108925	SEQ ID NO.525	—
AA034714	SEQ ID NO.59	—	U66865	SEQ ID NO.526	SEQ ID NO.527
D32167	SEQ ID NO.60	SEQ ID NO.61	Y07836	SEQ ID NO.528	SEQ ID NO.529
U24700	SEQ ID NO.62	SEQ ID NO.63	AA110543	SEQ ID NO.530	—
U07602	SEQ ID NO.64	—	AA117787	SEQ ID NO.531	—
U66620	SEQ ID NO.65	SEQ ID NO.66	D30785	SEQ ID NO.532	SEQ ID NO.533
L25126	SEQ ID NO.67	SEQ ID NO.68	U69488	SEQ ID NO.534	—
U02982	SEQ ID NO.69	SEQ ID NO.70	Z11997	SEQ ID NO.535	SEQ ID NO.536
AA155371	SEQ ID NO.71	—	D38613	SEQ ID NO.537	SEQ ID NO.538
U16740	SEQ ID NO.72	—	X92352	SEQ ID NO.539	SEQ ID NO.540
U16741	SEQ ID NO.73	SEQ ID NO.74	AA111168	SEQ ID NO.541	—
W58941	SEQ ID NO.75	—	AA111212	SEQ ID NO.542	—
U22948	SEQ ID NO.76	SEQ ID NO.77	W07963	SEQ ID NO.543	—
U23789	SEQ ID NO.78	SEQ ID NO.79	AA114781	SEQ ID NO.544	—
X68951	SEQ ID NO.80	SEQ ID NO.81	W08033	SEQ ID NO.545	—
AA144400	SEQ ID NO.82	—	AA117064	SEQ ID NO.546	—
U06670	SEQ ID NO.83	SEQ ID NO.84	AA117128	SEQ ID NO.547	—
U09399	SEQ ID NO.85	SEQ ID NO.86	AA162093	SEQ ID NO.548	—
U10118	SEQ ID NO.87	—	U10871	SEQ ID NO.549	SEQ ID NO.550
L17069	SEQ ID NO.88	—	AA120173	SEQ ID NO.551	—
W62091	SEQ ID NO.89	—	AA123463	SEQ ID NO.552	—
U09419	SEQ ID NO.90	SEQ ID NO.91	W07927	SEQ ID NO.553	—
AA041651	SEQ ID NO.92	—	AA118546	SEQ ID NO.554	—
AA051063	SEQ ID NO.93	—	AA118294	SEQ ID NO.555	—
W62420	SEQ ID NO.94	—	AA169951	SEQ ID NO.556	—
AA110896	SEQ ID NO.95	—	AA146194	SEQ ID NO.557	—
M60057	SEQ ID NO.96	—	W08228	SEQ ID NO.558	—
U33840	SEQ ID NO.97	SEQ ID NO.98	W33440	SEQ ID NO.559	—
W63835	SEQ ID NO.99	—	AA119959	SEQ ID NO.560	—
W63876	SEQ ID NO.100	—	W08326	SEQ ID NO.561	—
AA050268	SEQ ID NO.101	SEQ ID NO.	AA125425	SEQ ID NO.562	—
W63974	SEQ ID NO.102	SEQ ID NO.	AA137580	SEQ ID NO.563	—
D14571	SEQ ID NO.103	SEQ ID NO.104	AA138848	SEQ ID NO.564	—
L20450	SEQ ID NO.105	SEQ ID NO.106	AA145188	SEQ ID NO.565	—
W64413	SEQ ID NO.107	—	AA145160	SEQ ID NO.566	—
D16262	SEQ ID NO.108	SEQ ID NO.109	W13461	SEQ ID NO.567	—
AA120109	SEQ ID NO.110	—	W13878	SEQ ID NO.568	—
X61432	SEQ ID NO.111	SEQ ID NO.112	U35623	SEQ ID NO.569	SEQ ID NO.570

D10011	SEQ ID NO.113	SEQ ID NO.114	W77121	SEQ ID NO.571	—
L16953	SEQ ID NO.115	SEQ ID NO.116	W14370	SEQ ID NO.572	—
D29016	SEQ ID NO.117	SEQ ID NO.118	AA152884	SEQ ID NO.573	—
W65920	SEQ ID NO.119	—	AA023591	SEQ ID NO.574	—
L39123	SEQ ID NO.120	SEQ ID NO.121	AA155191	SEQ ID NO.575	—
U16162	SEQ ID NO.122	—	AA050733	SEQ ID NO.576	—
AA002504	SEQ ID NO.123	—	AA096645	SEQ ID NO.577	—
U20326	SEQ ID NO.124	SEQ ID NO.125	AA165847	SEQ ID NO.578	—
U27830	SEQ ID NO.126	SEQ ID NO.127	AA170223	SEQ ID NO.579	—
U24703	SEQ ID NO.128	SEQ ID NO.129	AA170375	SEQ ID NO.580	—
W70782	SEQ ID NO.130	—	Z25524	SEQ ID NO.581	SEQ ID NO.582
U28217	SEQ ID NO.131	SEQ ID NO.132	X16857	SEQ ID NO.583	—
AA105294	SEQ ID NO.133	—	D90151	SEQ ID NO.584	SEQ ID NO.585
U28138	SEQ ID NO.134	—	D00925	SEQ ID NO.586	SEQ ID NO.587
U29396	SEQ ID NO.135	SEQ ID NO.136	ditto	ditto	SEQ ID NO.588
L29441	SEQ ID NO.137	SEQ ID NO.138	L76223	SEQ ID NO.589	—
D10061	SEQ ID NO.139	SEQ ID NO.140	D00613	SEQ ID NO.590	SEQ ID NO.591
W75403	SEQ ID NO.141	—	W13502	SEQ ID NO.592	—
M73696	SEQ ID NO.142	SEQ ID NO.143	D90344	SEQ ID NO.593	SEQ ID NO.594
W75531	SEQ ID NO.144	—	AA138226	SEQ ID NO.595	—
W75616	SEQ ID NO.145	—	AA003230	SEQ ID NO.596	—
L05439	SEQ ID NO.146	—	W30651	SEQ ID NO.597	—
D16432	SEQ ID NO.147	SEQ ID NO.148	M22531	SEQ ID NO.598	SEQ ID NO.599
L21027	SEQ ID NO.149	SEQ ID NO.150	AA118758	SEQ ID NO.600	—
AA009150	SEQ ID NO.151	—	AA027739	SEQ ID NO.601	—
U13262	SEQ ID NO.152	SEQ ID NO.153	AA168362	SEQ ID NO.602	—
W78604	SEQ ID NO.154	—	D78645	SEQ ID NO.603	SEQ ID NO.604
X56045	SEQ ID NO.155	SEQ ID NO.156	M31131	SEQ ID NO.605	SEQ ID NO.606
U36277	SEQ ID NO.157	SEQ ID NO.158	AA153320	SEQ ID NO.607	—
W82115	SEQ ID NO.159	—	W34066	SEQ ID NO.608	—
M69293	SEQ ID NO.160	—	W10606	SEQ ID NO.609	—
U36760	SEQ ID NO.161	SEQ ID NO.162	W20828	SEQ ID NO.610	—
U35142	SEQ ID NO.163	SEQ ID NO.164	L08115	SEQ ID NO.611	SEQ ID NO.612
U14420	SEQ ID NO.165	SEQ ID NO.166	Z31554	SEQ ID NO.613	SEQ ID NO.614
Y00769	SEQ ID NO.167	SEQ ID NO.168	W41861	SEQ ID NO.615	—
U37720	SEQ ID NO.169	SEQ ID NO.170	W71125	SEQ ID NO.616	—
U35368	SEQ ID NO.171	SEQ ID NO.172	AA000961	SEQ ID NO.617	—
W89939	SEQ ID NO.173	—	W82998	SEQ ID NO.618	—
W37000	SEQ ID NO.174	—	W11954	SEQ ID NO.619	—
W97373	SEQ ID NO.175	—	U43844	SEQ ID NO.620	—
W96831	SEQ ID NO.176	—	AA008650	SEQ ID NO.621	—
W82209	SEQ ID NO.177	—	W18601	SEQ ID NO.622	—
AA009169	SEQ ID NO.178	—	W30116	SEQ ID NO.623	—
U31967	SEQ ID NO.179	SEQ ID NO.180	U53456	SEQ ID NO.624	SEQ ID NO.625

D28117	SEQ ID NO.181	SEQ ID NO.182	M27073	SEQ ID NO.626	SEQ ID NO.627
U34691	SEQ ID NO.183	SEQ ID NO.184	W12720	SEQ ID NO.628	—
U32329	SEQ ID NO.185	SEQ ID NO.186	M76131	SEQ ID NO.629	SEQ ID NO.630
U10903	SEQ ID NO.187	SEQ ID NO.188	U39192	SEQ ID NO.631	—
D49949	SEQ ID NO.189	SEQ ID NO.190	W54288	SEQ ID NO.632	—
D49429	SEQ ID NO.191	SEQ ID NO.192	M76124	SEQ ID NO.633	SEQ ID NO.634
U48397	SEQ ID NO.193	SEQ ID NO.194	W12946	SEQ ID NO.635	—
D00622	SEQ ID NO.195	—	AA024288	SEQ ID NO.636	—
U38940	SEQ ID NO.196	SEQ ID NO.197	W13412	SEQ ID NO.637	—
X75313	SEQ ID NO.198	SEQ ID NO.199	AA002852	SEQ ID NO.638	—
AA008683	SEQ ID NO.200	—	W15789	SEQ ID NO.639	—
U37799	SEQ ID NO.201	SEQ ID NO.202	L39879	SEQ ID NO.640	—
U43918	SEQ ID NO.203	SEQ ID NO.204	M61215	SEQ ID NO.641	SEQ ID NO.642
AA039108	SEQ ID NO.205	—	M70641	SEQ ID NO.643	—
L10244	SEQ ID NO.206	SEQ ID NO.207	D86729	SEQ ID NO.644	SEQ ID NO.645
D78647	SEQ ID NO.208	SEQ ID NO.209	L01640	SEQ ID NO.646	SEQ ID NO.647
U36220	SEQ ID NO.210	SEQ ID NO.211	M92378	SEQ ID NO.648	—
AA051121	SEQ ID NO.212	—	K01347	SEQ ID NO.649	SEQ ID NO.650
AA003458	SEQ ID NO.213	—	M23384	SEQ ID NO.651	SEQ ID NO.652
AA003554	SEQ ID NO.214	—	W77613	SEQ ID NO.653	—
U46934	SEQ ID NO.215	SEQ ID NO.216	W18385	SEQ ID NO.654	—
D50086	SEQ ID NO.217	SEQ ID NO.218	W53188	SEQ ID NO.655	—
AA007899	SEQ ID NO.219	—	J05277	SEQ ID NO.656	SEQ ID NO.657
AA008133	SEQ ID NO.220	—	W30499	SEQ ID NO.658	—
X58876	SEQ ID NO.221	SEQ ID NO.222	W67014	SEQ ID NO.659	—
D28530	SEQ ID NO.223	SEQ ID NO.224	M31885	SEQ ID NO.660	—
AA048974	SEQ ID NO.225	—	W54228	SEQ ID NO.661	—
AA120290	SEQ ID NO.226	—	W29756	SEQ ID NO.662	—
L40406	SEQ ID NO.227	SEQ ID NO.228	W30609	SEQ ID NO.663	—
U27340	SEQ ID NO.229	SEQ ID NO.230	D17666	SEQ ID NO.664	—
AA013581	SEQ ID NO.231	—	AA033408	SEQ ID NO.665	—
AA013830	SEQ ID NO.232	—	W33728	SEQ ID NO.666	—
Z37110	SEQ ID NO.233	SEQ ID NO.234	W74850	SEQ ID NO.667	—
AA119078	SEQ ID NO.235	—	AA119191	SEQ ID NO.668	—
Z67746	SEQ ID NO.236	SEQ ID NO.237	J05205	SEQ ID NO.669	SEQ ID NO.670
U51196	SEQ ID NO.238	SEQ ID NO.239	X06746	SEQ ID NO.671	SEQ ID NO.672
AA118878	SEQ ID NO.240	—	J02870	SEQ ID NO.673	SEQ ID NO.674
X89650	SEQ ID NO.241	SEQ ID NO.242	AA124273	SEQ ID NO.675	—
U07617	SEQ ID NO.243	SEQ ID NO.244	AA008245	SEQ ID NO.676	—
U37351	SEQ ID NO.245	SEQ ID NO.246	AA106492	SEQ ID NO.677	—
Y08640	SEQ ID NO.247	SEQ ID NO.248	X07997	SEQ ID NO.678	—
U48797	SEQ ID NO.249	SEQ ID NO.250	M21041	SEQ ID NO.679	SEQ ID NO.680
AA020620	SEQ ID NO.251	—	W36757	SEQ ID NO.681	—
X01023	SEQ ID NO.252	SEQ ID NO.253	V00835	SEQ ID NO.682	—

U34920	SEQ ID NO.254	SEQ ID NO.255	Y00305	SEQ ID NO.683	SEQ ID NO.684
U17698	SEQ ID NO.256	SEQ ID NO.257	M64640	SEQ ID NO.685	—
X54352	SEQ ID NO.258	SEQ ID NO.259	W42216	SEQ ID NO.686	—
U25708	SEQ ID NO.260	SEQ ID NO.261	U73478	SEQ ID NO.687	SEQ ID NO.688
X15267	SEQ ID NO.262	SEQ ID NO.263	J00398	SEQ ID NO.689	—
X66091	SEQ ID NO.264	—	M68899	SEQ ID NO.690	SEQ ID NO.691
X55573	SEQ ID NO.265	SEQ ID NO.266	W34232	SEQ ID NO.692	—
AA119194	SEQ ID NO.267	—	D38077	SEQ ID NO.693	—
X13586	SEQ ID NO.268	SEQ ID NO.269	W29533	SEQ ID NO.694	—
Z31553	SEQ ID NO.270	SEQ ID NO.271	W29462	SEQ ID NO.695	—
Z31399	SEQ ID NO.272	SEQ ID NO.273	W62036	SEQ ID NO.696	—
AA108956	SEQ ID NO.274	—	W77226	SEQ ID NO.697	—
Z31557	SEQ ID NO.275	SEQ ID NO.276	D14340	SEQ ID NO.698	SEQ ID NO.699
AA032948	SEQ ID NO.277	—	M83118	SEQ ID NO.700	SEQ ID NO.701
Z12302	SEQ ID NO.278	SEQ ID NO.279	M21952	SEQ ID NO.702	SEQ ID NO.703
X60367	SEQ ID NO.280	SEQ ID NO.281	W11666	SEQ ID NO.704	—
X64713	SEQ ID NO.282	SEQ ID NO.283	AA015415	SEQ ID NO.705	—
AA035938	SEQ ID NO.284	—	AA097018	SEQ ID NO.706	—
AA036445	SEQ ID NO.285	—	M27796	SEQ ID NO.707	SEQ ID NO.708
X17502	SEQ ID NO.286	SEQ ID NO.287	AA016424	SEQ ID NO.709	—
X79233	SEQ ID NO.288	SEQ ID NO.289	W29543	SEQ ID NO.710	—
X13135	SEQ ID NO.290	—	AA028728	SEQ ID NO.711	—
Z22593	SEQ ID NO.291	SEQ ID NO.292	K00988	SEQ ID NO.712	—
X90875	SEQ ID NO.293	SEQ ID NO.294	AA170547	SEQ ID NO.713	—
Z36270	SEQ ID NO.295	SEQ ID NO.296	W20613	SEQ ID NO.714	—
X67056	SEQ ID NO.297	SEQ ID NO.298	AA163687	SEQ ID NO.715	—
X13605	SEQ ID NO.299	SEQ ID NO.300	M93422	SEQ ID NO.716	SEQ ID NO.717
W89699	SEQ ID NO.301	—	W12548	SEQ ID NO.718	—
X62669	SEQ ID NO.302	—	AA145181	SEQ ID NO.719	—
AA049790	SEQ ID NO.303	—	AA144057	SEQ ID NO.720	—
M33227	SEQ ID NO.304	SEQ ID NO.305	AA138791	SEQ ID NO.721	—
AA060064	SEQ ID NO.306	—	L27453	SEQ ID NO.722	SEQ ID NO.723
X70393	SEQ ID NO.307	SEQ ID NO.308	AA119571	SEQ ID NO.724	—
AA050789	SEQ ID NO.309	—	AA117227	SEQ ID NO.725	—
AA051486	SEQ ID NO.310	—	U03645	SEQ ID NO.726	SEQ ID NO.727
X61147	SEQ ID NO.311	SEQ ID NO.312	Y07711	SEQ ID NO.728	SEQ ID NO.729
AA058163	SEQ ID NO.313	—	D17571	SEQ ID NO.730	SEQ ID NO.731
W14434	SEQ ID NO.314	—	U68058	SEQ ID NO.732	SEQ ID NO.733
W82720	SEQ ID NO.315	—	U66202	SEQ ID NO.734	SEQ ID NO.735
W89958	SEQ ID NO.316	—	U56651	SEQ ID NO.736	—
AA107471	SEQ ID NO.317	—	AA110711	SEQ ID NO.737	—
AA028547	SEQ ID NO.318	—	X92122	SEQ ID NO.738	SEQ ID NO.739
X60831	SEQ ID NO.319	SEQ ID NO.320	X87257	SEQ ID NO.740	—
Z49085	SEQ ID NO.321	SEQ ID NO.322	U69695	SEQ ID NO.741	SEQ ID NO.742

X05640	SEQ ID NO.323	—	X64550	SEQ ID NO.743	—
AA059967	SEQ ID NO.324	—	U59463	SEQ ID NO.744	SEQ ID NO.745
AA163305	SEQ ID NO.325	—	AA096532	SEQ ID NO.746	—
X64837	SEQ ID NO.326	SEQ ID NO.327	W85446	SEQ ID NO.747	—
AA060704	SEQ ID NO.328	—	X94444	SEQ ID NO.748	SEQ ID NO.749
X17320	SEQ ID NO.329	SEQ ID NO.330	AA080097	SEQ ID NO.750	—
X65553	SEQ ID NO.331	SEQ ID NO.332	D32132	SEQ ID NO.751	—
X51468	SEQ ID NO.333	—	Z71268	SEQ ID NO.752	SEQ ID NO.753
X14425	SEQ ID NO.334	SEQ ID NO.335	U28419	SEQ ID NO.754	—
AA061707	SEQ ID NO.336	—	X99641	SEQ ID NO.755	SEQ ID NO.756
X95403	SEQ ID NO.337	SEQ ID NO.338	AA072611	SEQ ID NO.757	—
AA139612	SEQ ID NO.339	—	X90647	SEQ ID NO.758	—
X57277	SEQ ID NO.340	SEQ ID NO.341	X95580	SEQ ID NO.759	SEQ ID NO.760
X70067	SEQ ID NO.342	SEQ ID NO.343	U46187	SEQ ID NO.761	SEQ ID NO.762
U05245	SEQ ID NO.344	—	U43085	SEQ ID NO.763	SEQ ID NO.764
AA062237	SEQ ID NO.345	—	L29479	SEQ ID NO.765	SEQ ID NO.766
AA063841	SEQ ID NO.346	—	U20892	SEQ ID NO.767	—
X89222	SEQ ID NO.347	SEQ ID NO.348	AA064467	SEQ ID NO.768	—
AA064004	SEQ ID NO.349	—	W09407	SEQ ID NO.769	—
AA087787	SEQ ID NO.350	—	AA015354	SEQ ID NO.770	—
AA064355	SEQ ID NO.351	—	Z31370	SEQ ID NO.771	SEQ ID NO.772
X68837	SEQ ID NO.352	SEQ ID NO.353	X57349	SEQ ID NO.773	SEQ ID NO.774
Z19579	SEQ ID NO.354	SEQ ID NO.355	X81464	SEQ ID NO.775	SEQ ID NO.776
Z19581	SEQ ID NO.356	SEQ ID NO.357	W89293	SEQ ID NO.777	—
X65657	SEQ ID NO.358	SEQ ID NO.359	X58523	SEQ ID NO.778	SEQ ID NO.779
X16319	SEQ ID NO.360	SEQ ID NO.361	X53476	SEQ ID NO.780	SEQ ID NO.781
X78304	SEQ ID NO.362	SEQ ID NO.363	AA044535	SEQ ID NO.782	—
X81987	SEQ ID NO.364	SEQ ID NO.365	AA037964	SEQ ID NO.783	—
U52197	SEQ ID NO.366	SEQ ID NO.367	X81632	SEQ ID NO.784	—
AA065652	SEQ ID NO.368	—	AA035984	SEQ ID NO.785	—
U23921	SEQ ID NO.369	SEQ ID NO.370	AA035915	SEQ ID NO.786	—
AA066333	SEQ ID NO.371	—	X61800	SEQ ID NO.787	SEQ ID NO.788
U38501	SEQ ID NO.372	—	U03457	SEQ ID NO.789	SEQ ID NO.790
W46019	SEQ ID NO.373	—	AA023390	SEQ ID NO.791	—
D49744	SEQ ID NO.374	SEQ ID NO.375	AA064208	SEQ ID NO.792	—
U58497	SEQ ID NO.376	SEQ ID NO.377	L75822	SEQ ID NO.793	SEQ ID NO.794
U38252	SEQ ID NO.378	SEQ ID NO.379	U49739	SEQ ID NO.795	SEQ ID NO.796
U40930	SEQ ID NO.380	SEQ ID NO.381	U41636	SEQ ID NO.797	SEQ ID NO.798
AA118729	SEQ ID NO.382	—	X70296	SEQ ID NO.799	SEQ ID NO.800
AA068057	SEQ ID NO.383	—	AA161905	SEQ ID NO.801	—
U47104	SEQ ID NO.384	SEQ ID NO.385	AA016858	SEQ ID NO.802	—
M97635	SEQ ID NO.386	—	U50734	SEQ ID NO.803	SEQ ID NO.804
U58883	SEQ ID NO.387	SEQ ID NO.388	U36993	SEQ ID NO.805	SEQ ID NO.806
D49654	SEQ ID NO.389	SEQ ID NO.390	AA013513	SEQ ID NO.807	—

D78641	SEQ ID NO.391	SEQ ID NO.392	U31992	SEQ ID NO.808	SEQ ID NO.809
U24428	SEQ ID NO.393	SEQ ID NO.394	AA007871	SEQ ID NO.810	—
L43326	SEQ ID NO.395	SEQ ID NO.396	U43317	SEQ ID NO.811	SEQ ID NO.812
U08378	SEQ ID NO.397	SEQ ID NO.398	U41465	SEQ ID NO.813	SEQ ID NO.814
D78382	SEQ ID NO.399	SEQ ID NO.400	AA000341	SEQ ID NO.815	—
AA073296	SEQ ID NO.401	—	U39738	SEQ ID NO.816	SEQ ID NO.817
D90173	SEQ ID NO.402	SEQ ID NO.403	U28728	SEQ ID NO.818	SEQ ID NO.819
U62483	SEQ ID NO.404	SEQ ID NO.405	M85151	SEQ ID NO.820	SEQ ID NO.821
D50523	SEQ ID NO.406	—	U04827	SEQ ID NO.822	—
U63323	SEQ ID NO.407	SEQ ID NO.408	U35885	SEQ ID NO.823	SEQ ID NO.824
AA079926	SEQ ID NO.409	—	X77557	SEQ ID NO.825	SEQ ID NO.826
X99963	SEQ ID NO.410	SEQ ID NO.411	D14883	SEQ ID NO.827	SEQ ID NO.828
X97281	SEQ ID NO.412	SEQ ID NO.413	U28068	SEQ ID NO.829	—
X92411	SEQ ID NO.414	SEQ ID NO.415	W65511	SEQ ID NO.830	—
AA087332	SEQ ID NO.416	—	U17961	SEQ ID NO.831	SEQ ID NO.832
X80232	SEQ ID NO.417	SEQ ID NO.418	L32973	SEQ ID NO.833	SEQ ID NO.834
U49350	SEQ ID NO.419	SEQ ID NO.420	D16333	SEQ ID NO.835	SEQ ID NO.836
U49351	SEQ ID NO.421	SEQ ID NO.422	Z67747	SEQ ID NO.837	—
AA097087	SEQ ID NO.423	—	D16580	SEQ ID NO.838	SEQ ID NO.839
AA087616	SEQ ID NO.424	—	M18776	SEQ ID NO.840	SEQ ID NO.841
D73368	SEQ ID NO.425	SEQ ID NO.426	M91458	SEQ ID NO.842	SEQ ID NO.843
U48804	SEQ ID NO.427	SEQ ID NO.428	AA120695	SEQ ID NO.844	—
AA087986	SEQ ID NO.429	—	L29503	SEQ ID NO.845	—
AA088003	SEQ ID NO.430	—	M25811	SEQ ID NO.846	SEQ ID NO.847
Y07685	SEQ ID NO.431	SEQ ID NO.432	M34141	SEQ ID NO.848	SEQ ID NO.849
Y07693	SEQ ID NO.433	SEQ ID NO.434	W45807	SEQ ID NO.850	—
Y07688	SEQ ID NO.435	SEQ ID NO.436	M63903	SEQ ID NO.851	SEQ ID NO.852
D67015	SEQ ID NO.437	SEQ ID NO.438	U10119	SEQ ID NO.853	SEQ ID NO.854
U67874	SEQ ID NO.439	SEQ ID NO.440	L35556	SEQ ID NO.855	SEQ ID NO.856
D86344	SEQ ID NO.441	SEQ ID NO.442	X98096	SEQ ID NO.857	SEQ ID NO.858
AA097203	SEQ ID NO.443	—	AA166601	SEQ ID NO.1038	—
Y08135	SEQ ID NO.444	SEQ ID NO.445	AA125097	SEQ ID NO.1039	—
U42384	SEQ ID NO.446	SEQ ID NO.447	AA168363	SEQ ID NO.1040	—
D87899	SEQ ID NO.448	SEQ ID NO.449	U19582	SEQ ID NO.1041	SEQ ID NO.1042
D87901	SEQ ID NO.450	SEQ ID NO.451	L22482	SEQ ID NO.1043	SEQ ID NO.1044
D87902	SEQ ID NO.452	SEQ ID NO.453	W63876	SEQ ID NO.1045	—
D87903	SEQ ID NO.454	SEQ ID NO.455	U11274	SEQ ID NO.1046	SEQ ID NO.1047
X96859	SEQ ID NO.456	—	W66636	SEQ ID NO.1048	—
U56909	SEQ ID NO.457	SEQ ID NO.458	D42124	SEQ ID NO.1049	SEQ ID NO.1050
AA098588	SEQ ID NO.459	—	U41765	SEQ ID NO.1051	SEQ ID NO.1052
X70298	SEQ ID NO.460	SEQ ID NO.461	X02452	SEQ ID NO.1053	—
U62021	SEQ ID NO.462	—	X76653	SEQ ID NO.1054	SEQ ID NO.1055
D90225	SEQ ID NO.463	SEQ ID NO.464	W13425	SEQ ID NO.1056	—

Table 2.

Genes of Which Transcription Levels Increased n-Fold ($5 \leq n < 10$)

ACCESSION NO.	SEQ ID NO. (Nucleotide Sequence)	SEQ ID NO. (Amino Acid Sequence)	ACCESSION NO.	SEQ ID NO. (Nucleotide Sequence)	SEQ ID NO. (Amino Acid Sequence)
X16995	SEQ ID NO.859	—	M90364	SEQ ID NO.917	SEQ ID NO.918
W78418	SEQ ID NO.860	—	M16465	SEQ ID NO.919	SEQ ID NO.920
L10106	SEQ ID NO.861	SEQ ID NO.862	W13425	SEQ ID NO.921	—
AA060409	SEQ ID NO.863	—	M62766	SEQ ID NO.922	SEQ ID NO.923
M57999	SEQ ID NO.864	SEQ ID NO.865	U73744	SEQ ID NO.924	—
M26251	SEQ ID NO.866	SEQ ID NO.867	W29669	SEQ ID NO.925	—
M22432	SEQ ID NO.868	SEQ ID NO.869	W33838	SEQ ID NO.926	—
U00689	SEQ ID NO.870	SEQ ID NO.871	L21707	SEQ ID NO.927	SEQ ID NO.928
L22482	SEQ ID NO.872	SEQ ID NO.873	W34687	SEQ ID NO.929	—
U70662	SEQ ID NO.874	SEQ ID NO.875	AA105763	SEQ ID NO.930	—
AA064330	SEQ ID NO.876	—	M18194	SEQ ID NO.931	—
D55720	SEQ ID NO.877	SEQ ID NO.878	J04694	SEQ ID NO.932	SEQ ID NO.933
U37465	SEQ ID NO.879	SEQ ID NO.880	AA140026	SEQ ID NO.934	—
AA003413	SEQ ID NO.881	—	L35303	SEQ ID NO.935	SEQ ID NO.936
U43319	SEQ ID NO.882	SEQ ID NO.883	AA073986	SEQ ID NO.937	—
Z72000	SEQ ID NO.884	SEQ ID NO.885	X96618	SEQ ID NO.938	SEQ ID NO.939
X96639	SEQ ID NO.886	SEQ ID NO.887	X85983	SEQ ID NO.940	SEQ ID NO.941
X61940	SEQ ID NO.888	SEQ ID NO.889	X04367	SEQ ID NO.942	SEQ ID NO.943
X56518	SEQ ID NO.890	—	X07967	SEQ ID NO.944	SEQ ID NO.945
X94998	SEQ ID NO.891	SEQ ID NO.892	D90146	SEQ ID NO.946	—
X71642	SEQ ID NO.893	SEQ ID NO.894	AA014024	SEQ ID NO.947	—
X53584	SEQ ID NO.895	—	M58566	SEQ ID NO.948	SEQ ID NO.949
W89863	SEQ ID NO.896	—	AA044561	SEQ ID NO.950	—
X53257	SEQ ID NO.897	SEQ ID NO.898	W65899	SEQ ID NO.951	—
X76858	SEQ ID NO.899	SEQ ID NO.900	D10217	SEQ ID NO.952	SEQ ID NO.953
AA062131	SEQ ID NO.901	—	M55154	SEQ ID NO.954	SEQ ID NO.955
U12473	SEQ ID NO.902	SEQ ID NO.903	W46015	SEQ ID NO.956	—
M68859	SEQ ID NO.904	—	M63554	SEQ ID NO.957	SEQ ID NO.958
AA067929	SEQ ID NO.905	—	M13990	SEQ ID NO.959	—
U39066	SEQ ID NO.906	SEQ ID NO.907	W46084	SEQ ID NO.1057	—
U44088	SEQ ID NO.908	SEQ ID NO.909	AA048304	SEQ ID NO.1058	—
D87691	SEQ ID NO.910	SEQ ID NO.911	AA036574	SEQ ID NO.1059	—
U24160	SEQ ID NO.912	SEQ ID NO.913	AA030865	SEQ ID NO.1060	—
AA142376	SEQ ID NO.914	—	X51829	SEQ ID NO.1061	SEQ ID NO.1062
AA140150	SEQ ID NO.915	—	X63440	SEQ ID NO.1063	SEQ ID NO.1064
W29163	SEQ ID NO.916	—			

Table 3.

Genes of Which Transcription Levels Increased More Than 10-Fold

ACCESSION NO.	SEQ ID NO. (Nucleotide Sequence)	SEQ ID NO. (Amino Acid Sequence)	ACCESSION NO.	SEQ ID NO. (Nucleotide Sequence)	SEQ ID NO. (Amino Acid Sequence)
W49108	SEQ ID NO.960	—	J04115	SEQ ID NO.1000	SEQ ID NO.1001
M64292	SEQ ID NO.961	—	M22326	SEQ ID NO.1002	SEQ ID NO.1003
L25125	SEQ ID NO.962	SEQ ID NO.963	X14897	SEQ ID NO.1004	SEQ ID NO.1005
D49382	SEQ ID NO.964	SEQ ID NO.965	M88242	SEQ ID NO.1006	SEQ ID NO.1007
AA153519	SEQ ID NO.966	—	AA138777	SEQ ID NO.1008	—
AA013648	SEQ ID NO.967	—	AA061624	SEQ ID NO.1009	—
AA003990	SEQ ID NO.968	—	J00424	SEQ ID NO.1010	—
L20294	SEQ ID NO.969	SEQ ID NO.970	AA003162	SEQ ID NO.1011	—
W89900	SEQ ID NO.971	—	AA104477	SEQ ID NO.1012	—
U28656	SEQ ID NO.972	SEQ ID NO.973	J03236	SEQ ID NO.1013	SEQ ID NO.1014
U41805	SEQ ID NO.974	—	W33559	SEQ ID NO.1015	—
V00727	SEQ ID NO.975	—	AA041826	SEQ ID NO.1016	—
D78644	SEQ ID NO.976	—	L23971	SEQ ID NO.1017	SEQ ID NO.1018
X67083	SEQ ID NO.977	SEQ ID NO.978	AA117973	SEQ ID NO.1019	—
Z11911	SEQ ID NO.979	SEQ ID NO.980	AA117286	SEQ ID NO.1020	—
W17589	SEQ ID NO.981	—	U51037	SEQ ID NO.1021	SEQ ID NO.1022
X68273	SEQ ID NO.982	SEQ ID NO.983	U66203	SEQ ID NO.1023	SEQ ID NO.1024
X63535	SEQ ID NO.984	SEQ ID NO.985	X57337	SEQ ID NO.1025	SEQ ID NO.1026
D85904	SEQ ID NO.986	SEQ ID NO.987	X83972	SEQ ID NO.1027	—
AA071853	SEQ ID NO.988	—	X58251	SEQ ID NO.1028	SEQ ID NO.1029
U47543	SEQ ID NO.989	SEQ ID NO.990	AA017867	SEQ ID NO.1030	—
W13646	SEQ ID NO.991	—	W97817	SEQ ID NO.1031	—
U58513	SEQ ID NO.992	SEQ ID NO.993	W75007	SEQ ID NO.1032	—
U70210	SEQ ID NO.994	—	U27838	SEQ ID NO.1033	SEQ ID NO.1034
U18372	SEQ ID NO.995	—	U16163	SEQ ID NO.1035	SEQ ID NO.1036
AA153484	SEQ ID NO.996	—	U20264	SEQ ID NO.1037	—
AA166440	SEQ ID NO.997	—	W18950	SEQ ID NO.1065	—
W08897	SEQ ID NO.998	—	W16377	SEQ ID NO.1066	—
AA162708	SEQ ID NO.999	—			

All the publications, patents and patent applications cited in the present specification are incorporated herein by reference in their entireties.

INDUSTRIAL APPLICABILITY

According to the present invention, ischemic conditions are examined by analyzing

gene expression in a test tissue. Application of such analysis to prevention and treatment of ischemia is expected. There is also provided a novel method of screening for prophylactics and therapeutics for ischemia using, as an indicator, the expression levels of genes which are expressed specifically under ischemic conditions.

SEQUENCE LISTING FREE TEXT

SEQ ID NO: 1067: synthetic DNA

SEQ ID NO: 1068: synthetic DNA

CLAIMS

1. A method for examining ischemic conditions, comprising measuring the expression levels of particular genes in a test sample or determining the expression profile of a gene group in the sample comprising a plurality of genes selected from said particular genes.

2. The method according to claim 1, wherein said particular genes are:

- (a) genes having any of the nucleotide sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066 or genes encoding any of the amino acid sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066; or
- (b) genes functionally equal to the genes having any of said nucleotide sequences or genes functionally equal to the genes encoding any of said amino acid sequences.

3. The method according to claim 1 or 2, wherein the measurement of the expression levels or the determination of the expression profile is carried out with a DNA chip.

4. The method according to claim 3, wherein the DNA chip is a synthetic-type DNA chip.

5. The method according to any one of claims 1 to 4, wherein the ischemic condition is at least one selected from the group consisting of compressive ischemia, occlusive ischemia and vasospastic ischemia.

6. A DNA chip for examining ischemic conditions, carrying a part or all of the following genes (a) or (b) immobilized on its surface:

- (a) genes having any of the nucleotide sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066 or genes encoding any of the amino acid sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066; or

- (b) genes functionally equal to the genes having any of said nucleotide sequences or genes functionally equal to the genes encoding any of said amino acid sequences.

7. The DNA chip according to claim 6, wherein the ischemic condition is at least one selected from the group consisting of compressive ischemia, occlusive ischemia and vasospastic ischemia.

8. A method of screening for ischemic condition-improving drugs or therapeutics for ischemic diseases, comprising selecting candidate drugs using as an indicator whether or not:

- (a) the expression levels of particular genes of which expression levels change under ischemic conditions return to a normal expression levels; or
- (b) the expression profile of a gene group comprising a plurality of said particular genes returns to a normal expression profile;

by the administration of a drug to a test animal or test cell, wherein the returning to the normal expression levels or normal expression profile indicates that said drug is a candidate drug.

9. The method according to claim 8, wherein said particular genes of which expression levels change under ischemic conditions are:

- (a) genes having any of the nucleotide sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066 or genes encoding any of the amino acid sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066; or
- (b) genes functionally equal to the genes having any of said nucleotide sequences or genes functionally equal to the genes encoding any of said amino acid sequences.

10. The method according to claim 8 or 9, wherein the ischemic condition is at least one selected from the group consisting of compressive ischemia, occlusive ischemia and vasospastic ischemia.

11. A computer-readable record medium in which the following data (a) or (b) have been recorded:

- (a) expression level data of genes of which expression levels change under ischemic conditions; or
- (b) expression profile data of a gene group comprising a plurality of genes selected from said genes.

12. The record medium according to claim 11, wherein said genes of which expression levels change under ischemic conditions are:

- (a) genes having any of the nucleotide sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066 or genes encoding any of the amino acid sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066; or
- (b) genes functionally equal to the genes having said nucleotide sequences or genes functionally equal to the genes encoding said amino acid sequences.

13. The record medium according to claim 11 or 12, wherein the ischemic condition is at least one selected from the group consisting of compressive ischemia, occlusive ischemia and vasospastic ischemia.

14. A computer-readable record medium in which a program that directs a computer to execute the following procedures has been recorded:

- (a) procedures to input expression level data or expression profile data of particular genes in a test sample;
- (b) procedures to record the input data;
- (c) procedures to check the recorded data with already recorded expression level data or expression profile data of said genes under ischemic conditions;
- (d) procedures to determine whether the test sample is under ischemic conditions or not based on the checking results obtained in (c); and
- (e) if the test sample has been determined as being under ischemic conditions, procedures to identify the clinical stage of the ischemic conditions of the test sample based on the

checking results obtained in (c).

15. The record medium according to claim 14, wherein said genes are:

- (a) genes having any of the nucleotide sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066 or genes encoding any of the amino acid sequences shown in SEQ ID NO: 1 through SEQ ID NO: 1066; or
- (b) genes functionally equal to the genes having any of said nucleotide sequences or genes functionally equal to the genes encoding any of said amino acid sequences.

16. The record medium according to claim 14 or 15, wherein the ischemic condition is at least one selected from the group consisting of compressive ischemia, occlusive ischemia and vasospastic ischemia.

Fig. 1

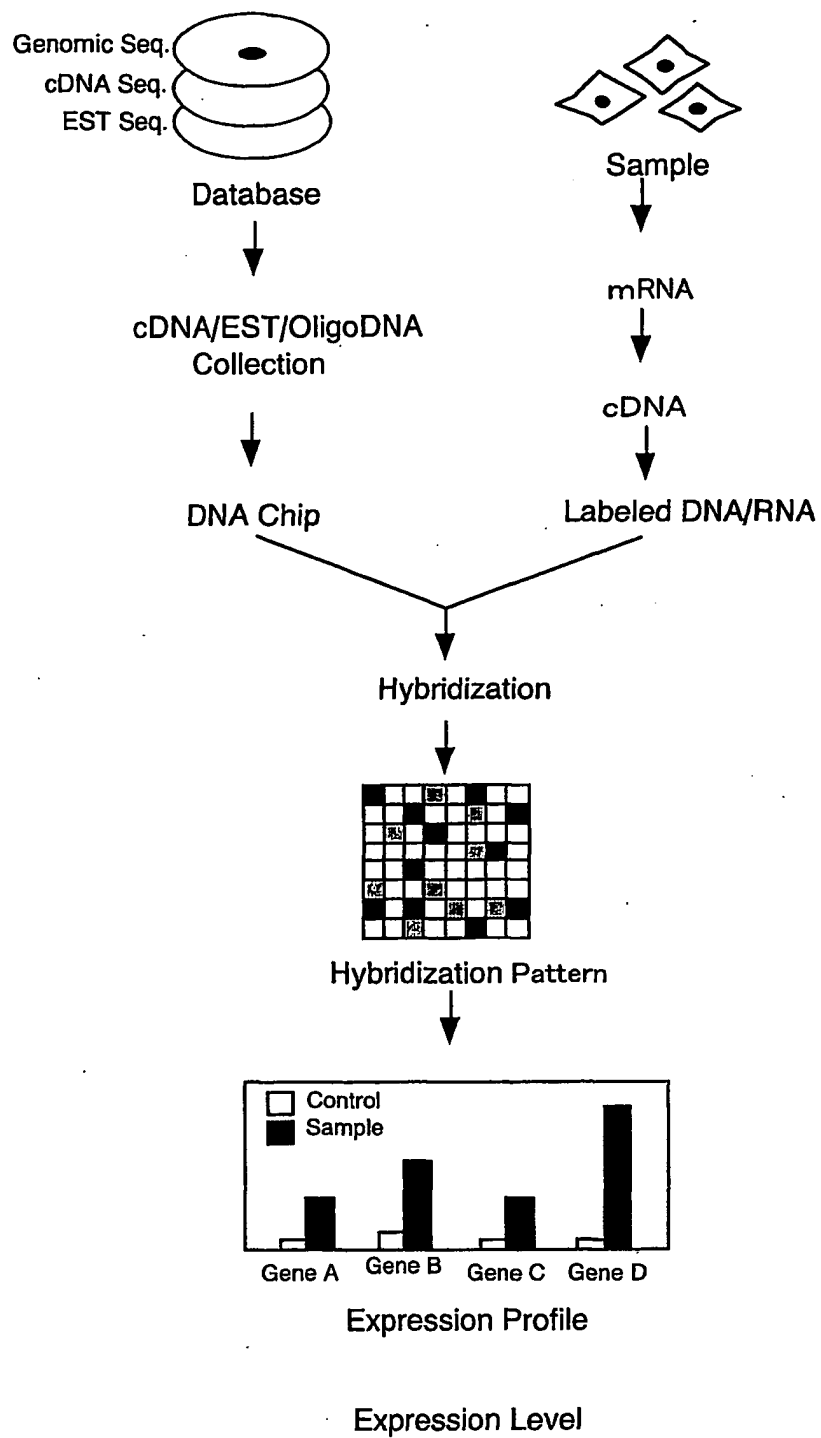


Fig. 2

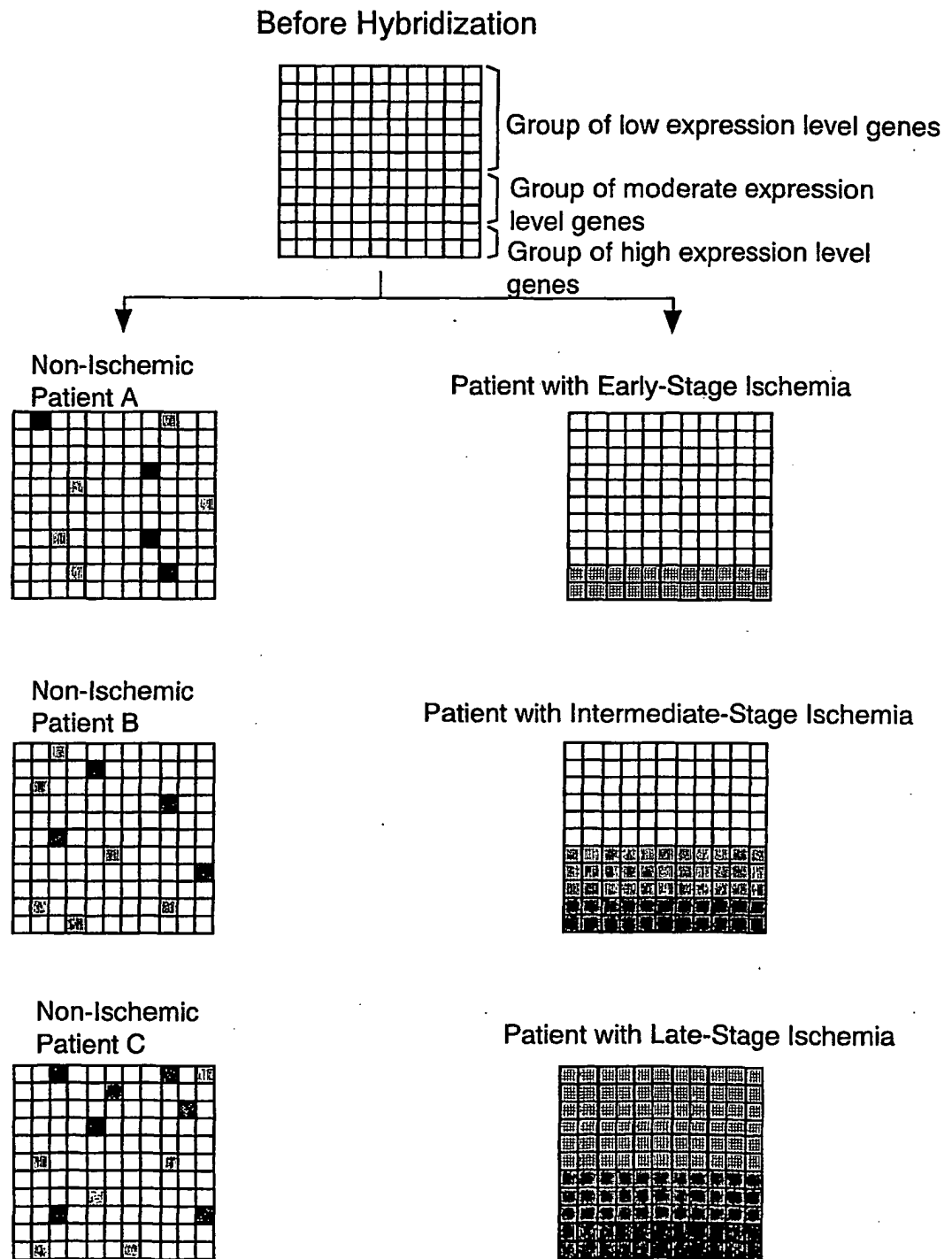


Fig. 3

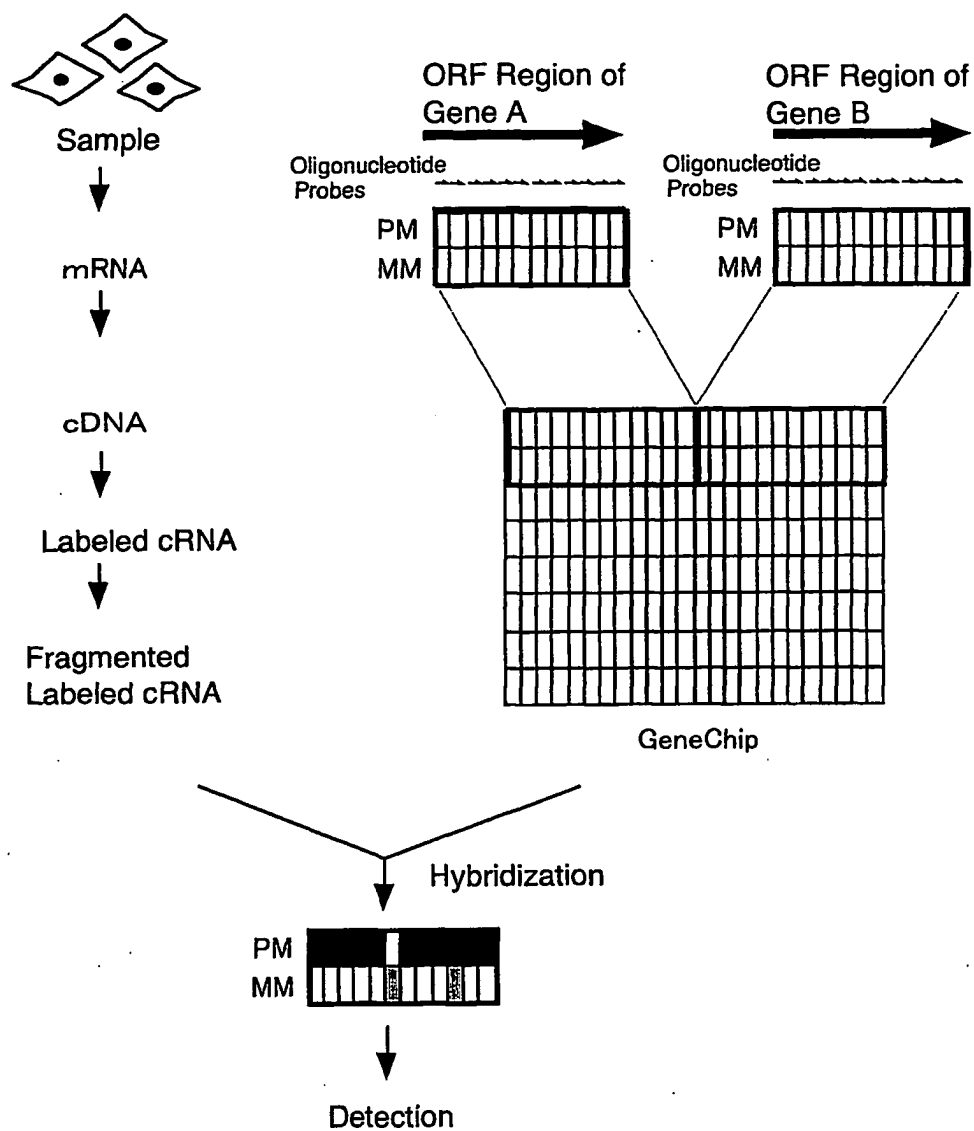


Fig.4

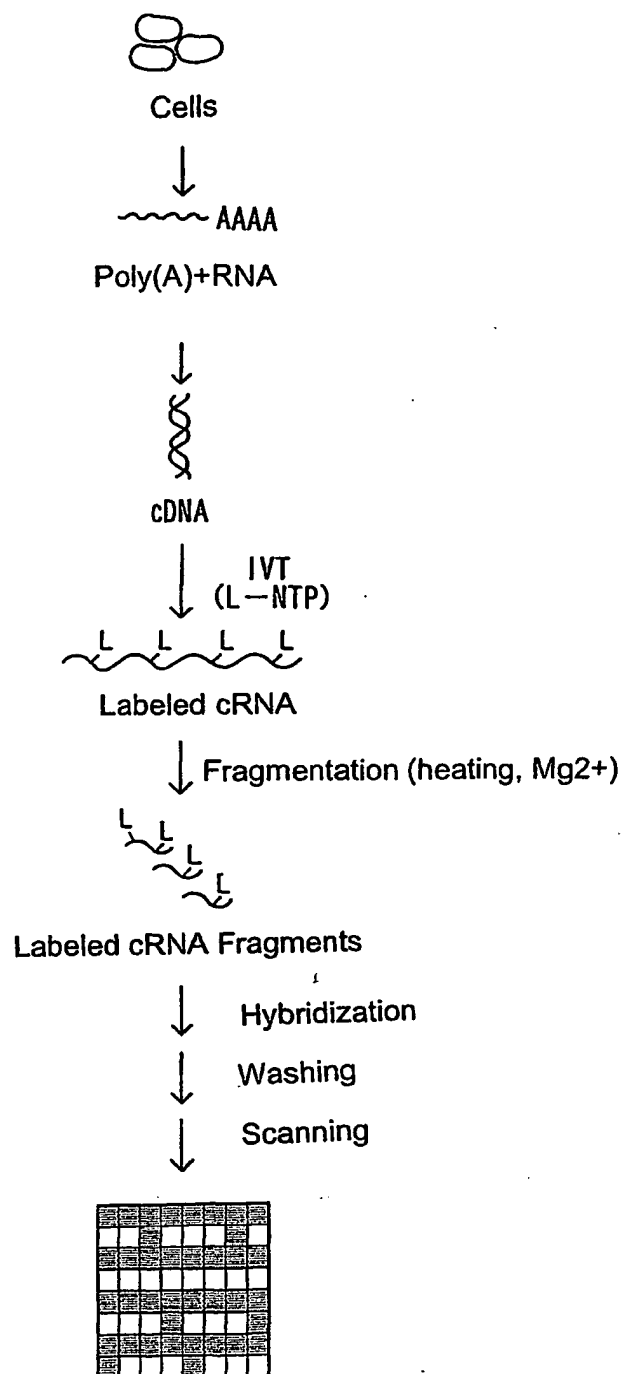


Fig.5

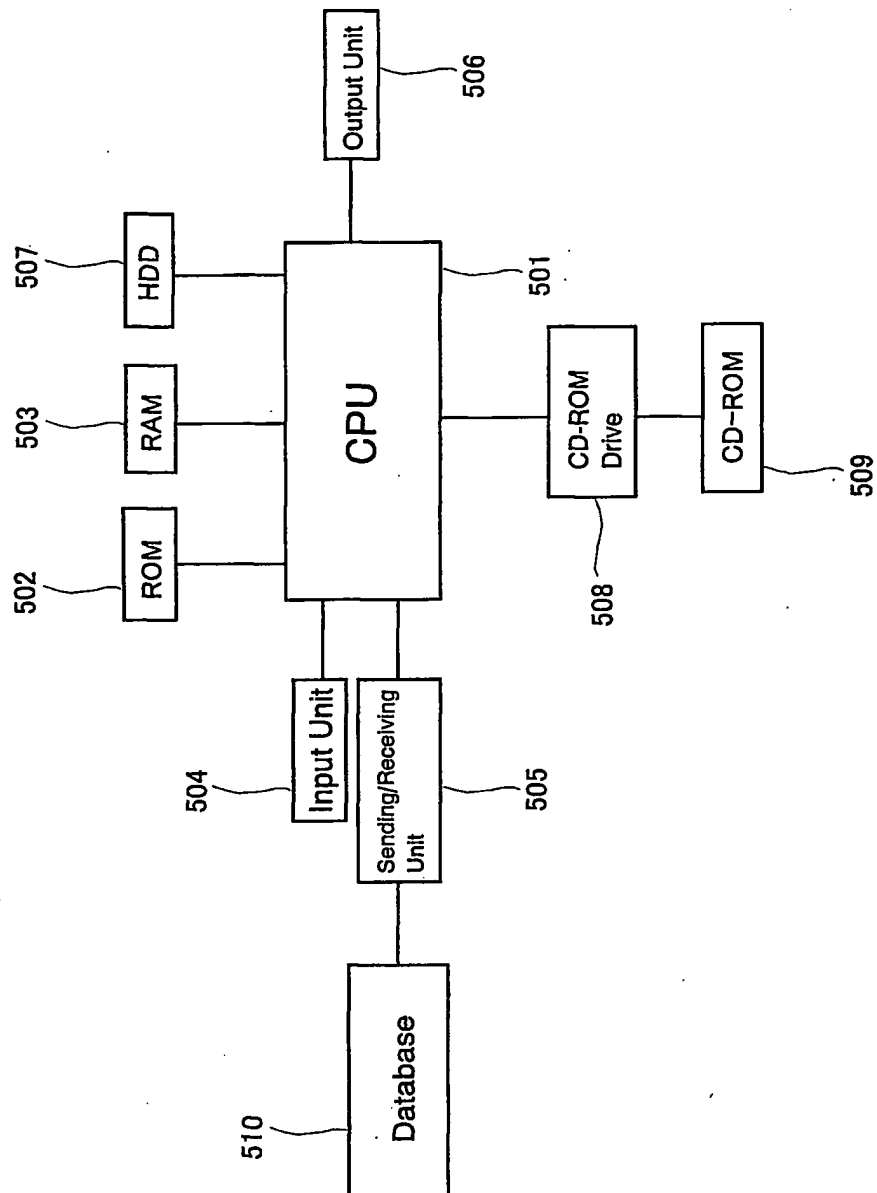
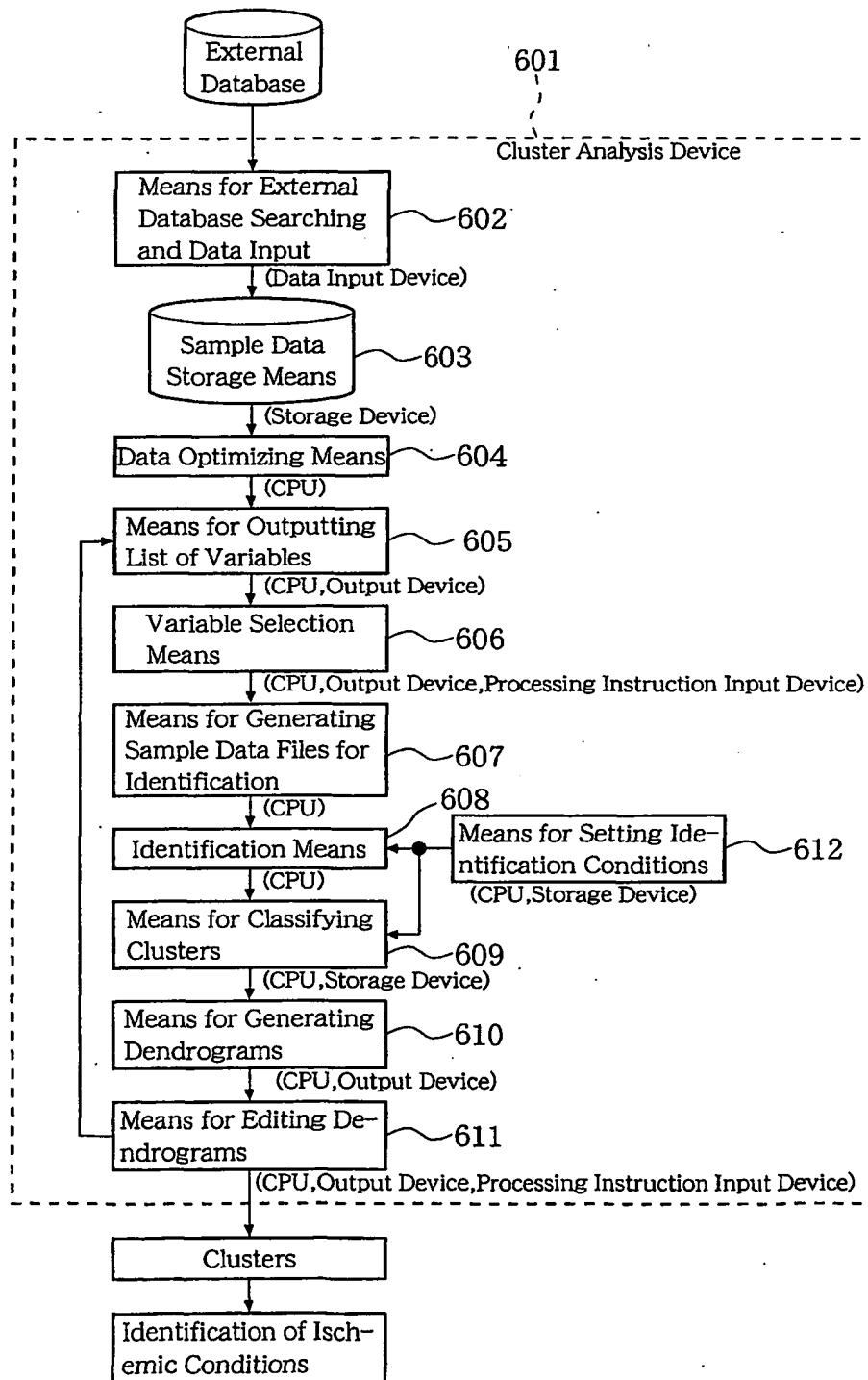


Fig.6



SEQUENCE LISTING

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<120> METHOD FOR EXAMINING ISCHEMIC CONDITIONS

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20

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tcg act acc agt gat gaa aag gaa ata cca ttg gca caa act gca cag	192
Ser Thr Thr Ser Asp Glu Lys Glu Ile Pro Leu Ala Gln Thr Ala Gln	
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Pro Thr Ser Ala Ile Val Arg Pro Ala Ser Leu Gln Val Pro Asn Val	
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 Met Asn Tyr Glu Gly Ser Pro Ile Lys Val Thr Leu Ala Thr Leu Lys
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Arg Thr Ser Val Ile Leu Ala Arg Val Phe Gly Leu His Leu Arg Leu			
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Thr Asn Leu His Thr Met Glu Phe Ala Leu Val Lys Ala Leu Ser Pro			
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tgg aag aag cac tcc acc ttc gga gac gtg agg aag ata atc acc gag	1679		
Trp Lys Lys His Ser Thr Phe Gly Asp Val Arg Lys Ile Ile Thr Glu			
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gag ttc gtc cag cag aat tac ctg aag tac cag cgt gtg ccc cac atc	1727		
Glu Phe Val Gln Gln Asn Tyr Leu Lys Tyr Gln Arg Val Pro His Ile			
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gag cct ccc gag tac gag ttc ttc tgg ggg tcc aga gct aac cgt gaa	1775		

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Pro Pro Pro Ala Ser Leu Ala Ala Asn Leu Ala Gly Pro Pro Cys Ala
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 Arg Ile Glu Asp Val Asp Pro Lys Ile Leu Gln Gln Ala Ala Glu Glu
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 Gly Arg Ala His Gln Pro Gln Ser Pro Ala Arg Pro Ile Pro Ala Pro
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 Pro Ala Pro Ala Gln Leu Val Gln Lys Ala His Glu Leu Met Trp Tyr
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 Val Leu Val Lys Asp Gln Lys Arg Met Val Leu Trp Phe Pro Asp Met
 115 120 125
 Val Lys Glu Val Met Gly Ser Tyr Lys Lys Trp Cys Arg Ser Ile Leu
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 Pro Glu Glu Leu Asp Arg Val Ala Leu Asn Asn Arg Met Pro Met Thr
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 Gly Leu Leu Leu Met Ile Leu Ser Leu Ile Tyr Val Lys Gly Arg Gly
 195 200 205
 Ala Arg Glu Gly Ala Val Trp Asn Val Leu Arg Ile Leu Gly Leu Arg
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 Pro Trp Lys Lys His Ser Thr Phe Gly Asp Val Arg Lys Ile Ile Thr
 225 230 235 240
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 Lys Asp Pro Gln Ala Trp Pro Ser Arg Tyr Arg Glu Ala Leu Glu Gln
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Met Met Ser Phe Gly Ser Ala

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Leu His Tyr Ser Leu Ser Arg Lys Ala Gly Pro Gly Gly Thr Arg Ser
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 Ala Ala Val Ala Ala Arg Ser Glu Lys Glu Gln Leu Gln Ala Leu Asn
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 gac cgc ttc gcg ggc tac atc gac aag gtg agg cag ctc gag gcg cac 510
 Asp Arg Phe Ala Gly Tyr Ile Asp Lys Val Arg Gln Leu Glu Ala His
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 aac cgc agc ctg gag ggc gag gcg gcg gcg ctg cgg cag caa caa gcc 558
 Asn Arg Ser Leu Glu Gly Glu Ala Ala Ala Leu Arg Gln Gln Gln Ala
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 Glu Gln Glu His Leu Leu Glu Asp Ile Ala His Val Arg Gln Arg Leu
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Glu Lys Glu Thr Val Ile Val Glu Gly Gln Thr Glu Glu Ile Arg Val			
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Thr Glu Gly Val Thr Glu Glu Glu Asp Lys Glu Ala Gln Gly Gln Glu			
465	470	475	480
Gly Glu Glu Ala Glu Glu Gly Glu Glu Lys Glu Glu Glu Glu Gly Ala			
485	490	495	
Ala Ala Thr Ser Pro Pro Ala Glu Glu Ala Ala Ser Pro Glu Lys Glu			
500	505	510	
Thr Lys Ser Arg Val Lys Glu Glu Ala Lys Ser Pro Gly Glu Ala Lys			
515	520	525	
Ser Pro Gly Glu Ala Lys Ser Pro Gly Glu Ala Lys Ser Pro Ala Glu			
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Ala Lys Ser Pro Gly Glu Ala Lys Ser Pro Arg Glu Ala Lys Ser Pro			
545	550	555	560
Gly Glu Ala Lys Ser Pro Ala Glu Pro Lys Ser Pro Ala Glu Pro Lys			
565	570	575	
Ser Pro Ala Glu Ala Lys Ser Pro Ala Glu Pro Lys Ser Pro Ala Thr			
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Val Lys Ser Pro Gly Glu Ala Lys Ser Pro Ser Glu Ala Lys Ser Pro			
595	600	605	

Ala Glu Ala Lys Ser Pro Ala Glu Ala Lys Ser Pro Ala Glu Ala Lys
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Ser Pro Ala Glu Ala Lys Ser Pro Ala Glu Ala Lys Ser Pro Ala Glu
625 630 635 640
Ala Lys Ser Pro Ala Thr Val Lys Ser Pro Gly Glu Ala Lys Ser Pro
645 650 655
Ser Glu Ala Lys Ser Pro Ala Glu Ala Lys Ser Pro Ala Glu Ala Lys
660 665 670
Ser Pro Ala Glu Ala Lys Ser Pro Ala Glu Val Lys Ser Pro Gly Glu
675 680 685
Ala Lys Ser Pro Ala Glu Pro Lys Ser Pro Ala Glu Ala Lys Ser Pro
690 695 700
Ala Ala Val Lys Ser Pro Ala Glu Ala Lys Ser Pro Ala Ala Val Lys
705 710 715 720
Ser Pro Gly Glu Ala Lys Ser Pro Gly Glu Ala Lys Ser Pro Ala Glu
725 730 735
Ala Lys Ser Pro Ala Glu Ala Lys Ser Pro Ile Glu Val Lys Ser Pro
740 745 750
Glu Lys Ala Lys Thr Pro Val Lys Glu Gly Ala Lys Ser Pro Ala Glu
755 760 765
Ala Lys Ser Pro Glu Lys Ala Lys Ser Pro Val Lys Glu Asp Ile Lys
770 775 780
Pro Pro Ala Glu Ala Lys Ser Pro Glu Lys Ala Lys Ser Pro Met Lys
785 790 795 800
Glu Gly Ala Lys Pro Pro Glu Lys Ala Lys Pro Leu Asp Val Lys Ser
805 810 815
Pro Glu Ala Gln Thr Pro Val Gln Glu Glu Ala Asn Asp Pro Thr Asp
820 825 830
Ile Arg Pro Pro Glu Gln Val Lys Ser Pro Ala Lys Glu Lys Ala Lys

835	840	845
Ser Pro Glu Lys Glu Glu Ala Lys Thr Ser Glu Lys Val Ala Pro Lys		
850	855	860
Lys Glu Glu Val Lys Ser Pro Val Lys Glu Glu Val Lys Ala Lys Glu		
865	870	875
Pro Pro Lys Lys Val Glu Glu Glu Lys Thr Leu Pro Thr Pro Lys Thr		
885	890	895
Glu Ala Lys Glu Ser Lys Lys Asp Glu Ala Pro Lys Glu Ala Pro Lys		
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Pro Lys Val Glu Glu Lys Lys Glu Thr Pro Thr Glu Lys Pro Lys Asp		
915	920	925
Ser Thr Ala Glu Ala Lys Lys Glu Glu Ala Gly Glu Lys Lys Lys Ala		
930	935	940
Val Ala Ser Glu Glu Glu Thr Pro Ala Lys Leu Gly Val Lys Glu Glu		
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Ala Lys Pro Lys Glu Lys Thr Glu Thr Thr Lys Thr Glu Ala Glu Asp		
965	970	975
Thr Lys Ala Lys Glu Pro Ser Lys Pro Thr Glu Thr Glu Lys Pro Lys		
980	985	990
Lys Glu Glu Met Pro Ala Ala Pro Glu Lys Lys Asp Thr Lys Glu Glu		
995	1000	1005
Lys Thr Thr Glu Ser Arg Lys Pro Glu Glu Lys Pro Lys Met Glu Ala		
1010	1015	1020
Lys Val Lys Glu Asp Asp Lys Ser Leu Ser Lys Glu Pro Ser Lys Pro		
1025	1030	1035
Lys Thr Glu Lys Ala Glu Lys Ser Ser Ser Thr Asp Gln Lys Glu Ser		
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Gln Pro Pro Glu Lys Thr Thr Glu Asp Lys Ala Thr Lys Gly Glu Lys		
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<210> 10

<211> 665

<212> DNA

<213> *Mus musculus*

<400> 10

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tgggcgagat catcaagcgg ttcgagcaga aggggttccg ccttgttggg ctgaagtttc 180
tgcaggcttc agaggacctt ctcaaggagc actacactga cctgaaggac cgcccccttc 240
ttactggcct ggtgaaatac atgcactcag gaccagtggg tgctatgggc tgggagggtc 300
tgaatgtggg gaagacaggc cgcgigatgc ttggagagac caaccccgca gactctaagc 360
ctgggaccaa acgaggagac ttctgcatcc aagttaggcg gaacatcatt catggcagcg 420
attctgtaaa gagcgcagag aaggagatca gcttgttggt tcagcctgag gagctgggtg 480
agtacaagag ctgtcgcaga actggatcta tgagtgcag gacgggtctg gttttctacc 540
tgcttactct tgtttctaca ggcaggggac aagaaccgta gatatttctg gaattctttg 600
acctgnaang accttttggg actgtgactc ctgtgcagtg ttacgtcact gttagattaa 660
gtgtt 665
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<210> 11

<211> 364

<212> DNA

<213> *Mus musculus*

<400> 11

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cacatatcat tgactgtatc ctgtaatatg caacggcaca gctagttttt ctgatctgga 180
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taaaagttag tctgtatagt caacatcttg aactatattt caaatgaaat ttaaataacct 240
tttaaagaaa aaaaaaacac ctaagaataa atctcaacag acaactctat tctgattata 300
tcaaagcaaa attttccttt ctgcaaatt gcittgtgtg ttcaatgcta ggctgatag 360
cgat 364

<210> 12

<211> 470

<212> DNA

<213> Mus musculus

<400> 12

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agggatccct cgttgagaaa atctgggggtg ggaaatgtct tcatcaagaa cctggacaaa 180
tccatagaca acaaggcact gtatgacact ttctctgcct ttggaaacat cttgtcctgt 240
aagggtgtct gtgatgagaa cggctctaag ggctatgctt ttgttcactt cgagacccaa 300
gaggccgccc acaagggcac cgagaagatg aatggcatgc ttctcaatga ccgtaaagtg 360
ttcgtgggta gattcaagtc tcgcaaaaaa ccggaaacgg attttgggag ccaagggcaa 420
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<210> 13

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<212> DNA

<213> Mus musculus

<220>

<221> exon

<222> (13).. (762)

<400> 13

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aac atc tca gag aaa aag aaa aga aac aca tgt tag ggc ctt tct gag 147
aaa aca ttc ctc tgc cgt ggt ttt cct tta acg atc tgc agt ctg agg 195
gga gta tca gtg aat att atc ctt ctt ttc tta ata cca ctc tcc cag 243
aca ggt ttt ggt tag ggt gac cca cag aca ttg tat tta tta ggc tat 291
gaa aaa gta tgc cca ttt cct caa ttg tta att gct ggg cct gtg gct 339
ggc tag cta gcc aaa tat gta aat gct tgt ttc tgc tct gcc caa aga 387
gaa agg cag gct cct gtg tgg gaa gtc aca gag ccc cca aag cca act 435
gga tga gga agg act ctg gct ttt ggc ata aaa aag agc tgg tag tca 483
gag ctg ggg cag aag gtc ctg cag aca gac aga cag aca gac aga cag 531
aca gac aga cag aca gag aca caa aga cat gga cta gaa tgg agg agg 579
gag gga gga agg gag gga ggg aga gag aga gag aga aag aaa gag aga 627
gag acc aca tgg aga caa aat ggc tta agt tag ctg ggc tac ctg aga 675
gac tgt ccc aga aaa cag gcc aac aac ctt cct tat gct ata tag atg 723
tct cag tgt ctt tat cat taa aca cca agc agg act gct aaaaactctg 772
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<210> 14

<211> 906

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (63).. (653)

<400> 14

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 Met Arg Thr Trp Ala Cys Leu Leu Leu Leu Gly Cys Gly Tyr Leu
 1 5 10 15
 gcc cat gcc ctg gcc gag gaa gcc gag ata ccc cgg gag ttg atc gag 155
 Ala His Ala Leu Ala Glu Glu Ala Glu Ile Pro Arg Glu Leu Ile Glu
 20 25 30
 cgg ctg gct cga agt cag atc cac agc atc cgg gac ctc cag cga ctc 203
 Arg Leu Ala Arg Ser Gln Ile His Ser Ile Arg Asp Leu Gln Arg Leu
 35 40 45
 ttg gag ata gac tcc gta ggg gct gag gat gcc ttg gag aca agt ctg 251
 Leu Glu Ile Asp Ser Val Gly Ala Glu Asp Ala Leu Glu Thr Ser Leu
 50 55 60
 aga gcc cat ggg tcc cat gcc att aac cat gtg ccc gag aag cgg cct 299
 Arg Ala His Gly Ser His Ala Ile Asn His Val Pro Glu Lys Arg Pro
 65 70 75
 gtg ccc att cgc agg aag aga agt att gag gaa gcc att cct gca gtt 347
 Val Pro Ile Arg Arg Lys Arg Ser Ile Glu Glu Ala Ile Pro Ala Val
 80 85 90 95
 tgc aag acc agg acg gtc att tac gag ata cct cgg agc cag gtg gac 395
 Cys Lys Thr Arg Thr Val Ile Tyr Glu Ile Pro Arg Ser Gln Val Asp
 100 105 110
 ccc aca tcg gcc aac ttc ctg atc tgg ccc cca tgt gtg gag gtg aag 443
 Pro Thr Ser Ala Asn Phe Leu Ile Trp Pro Pro Cys Val Glu Val Lys
 115 120 125
 cgc tgc act ggc tgt tgt aac acc agc agc gtc aag tgc cag cct tca 491
 Arg Cys Thr Gly Cys Cys Asn Thr Ser Ser Val Lys Cys Gln Pro Ser
 130 135 140
 cgg gtc cac cac cgc agt gtc aag gtg gcc aaa gtg gag tat gtc agg 539

Arg Val His His Arg Ser Val Lys Val Ala Lys Val Glu Tyr Val Arg
 145 150 155
 aag aag cca aaa ttg aaa gag gtc cag gtg agg tta gag gaa cac ctg 587
 Lys Lys Pro Lys Leu Lys Glu Val Gln Val Arg Leu Glu Glu His Leu
 160 165 170 175
 gag tgt gca tgt gcg acc tcc aac ctg aac cca gac cat cgg gag gag 635
 Glu Cys Ala Cys Ala Thr Ser Asn Leu Asn Pro Asp His Arg Glu Glu
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 Glu Thr Asp Val Arg
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<210> 15

<211> 196

<212> PRT

<213> Mus musculus

<400> 15

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 20 25 30
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 35 40 45
 Glu Ile Asp Ser Val Gly Ala Glu Asp Ala Leu Glu Thr Ser Leu Arg

50 55 60
 Ala His Gly Ser His Ala Ile Asn His Val Pro Glu Lys Arg Pro Val
 65 70 75 80
 Pro Ile Arg Arg Lys Arg Ser Ile Glu Glu Ala Ile Pro Ala Val Cys
 85 90 95
 Lys Thr Arg Thr Val Ile Tyr Glu Ile Pro Arg Ser Gln Val Asp Pro
 100 105 110
 Thr Ser Ala Asn Phe Leu Ile Trp Pro Pro Cys Val Glu Val Lys Arg
 115 120 125
 Cys Thr Gly Cys Cys Asn Thr Ser Ser Val Lys Cys Gln Pro Ser Arg
 130 135 140
 Val His His Arg Ser Val Lys Val Ala Lys Val Glu Tyr Val Arg Lys
 145 150 155 160
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<210> 16

<211> 2146

<212> DNA

<213> Mus musculus

<400> 16

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cacggtgtgc accacgtcct cctggttigg tttttctcca cccctctaca tccttctcat 480
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<210> 17

<211> 1827

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (460).. (1446)

<400> 17

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 gggacaagga cacaagaga gggacaagga gaaggacag ggcagggcag ggaagaagaa 300
 aggaaaagaa aaaagggaag gggaaaagagg agaaagggaa gaaggcagag gagaacagag 360
 gtgctgggcc agagcaccag gaggctttga agctgcaggc tgtgtcccca gggccagggg 420
 tcaggccagg tcatcagcgt cgtcgggcag gcctgcagc atg aat ggc ccc gca 474

Met Asn Gly Pro Ala

1

5

ctc ctg agg aga aat gct agc aaa cgg ggc ctg gag aag ctg ctg agg 522

Leu Leu Arg Arg Asn Ala Ser Lys Arg Gly Leu Glu Lys Leu Leu Arg

10

15

20

ctc aca act cag tgg aga gaa gaa gac gag gaa gag gct gcc cgt gag 570

Leu Thr Thr Gln Trp Arg Glu Glu Asp Glu Glu Glu Ala Ala Arg Glu
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 Gln Arg Gln Arg Glu Arg Glu Arg Gln Leu Gln Asp Gln Asp Lys Asp
 40 45 50
 aaa gaa gat gat ggt ggc cat tcc ctg gaa cag cca gga cag cag aca 666
 Lys Glu Asp Asp Gly Gly His Ser Leu Glu Gln Pro Gly Gln Gln Thr
 55 60 65
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 Leu Ile Ser Leu Lys Ser Ser Glu Leu Asp Glu Asp Glu Gly Phe Gly
 70 75 80 85
 gac tgg tcc caa aag ccg gag cca cgg cag caa ttc tgg ggg aat gag 762
 Asp Trp Ser Gln Lys Pro Glu Pro Arg Gln Gln Phe Trp Gly Asn Glu
 90 95 100
 ggg act gca gaa ggg act gaa ccc tct caa agc gag aga cca gag gag 810
 Gly Thr Ala Glu Gly Thr Glu Pro Ser Gln Ser Glu Arg Pro Glu Glu
 105 110 115
 aaa caa aca gag gag agt tct cac caa gcc aaa gtc cac ttg gag gag 858
 Lys Gln Thr Glu Glu Ser Ser His Gln Ala Lys Val His Leu Glu Glu
 120 125 130
 tca aac ctg agc tac agg gag ccc gat cca gag gat gct gtt ggg ggt 906
 Ser Asn Leu Ser Tyr Arg Glu Pro Asp Pro Glu Asp Ala Val Gly Gly
 135 140 145
 tct ggg gag gcg gaa gag cat ctg ata cgt cat cag gtc agg acc ccc 954
 Ser Gly Glu Ala Glu Glu His Leu Ile Arg His Gln Val Arg Thr Pro
 150 155 160 165
 agc cct ttg gcc tta gaa gac acc gtt gag ctg agt tca cct ccc ctg 1002
 Ser Pro Leu Ala Leu Glu Asp Thr Val Glu Leu Ser Ser Pro Pro Leu
 170 175 180

agc cct acc acc aaa ctg gct gat agg acc gag tcc ctg aac cgc tcc 1050
 Ser Pro Thr Thr Lys Leu Ala Asp Arg Thr Glu Ser Leu Asn Arg Ser
 185 190 195
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 200 205 210
 tcc aca att gat gaa cgc ctg cag cag tat acc cag gcc act gag tct 1146
 Ser Thr Ile Asp Glu Arg Leu Gln Gln Tyr Thr Gln Ala Thr Glu Ser
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 Ser Gly Arg Thr Pro Lys Leu Ser Arg Gln Pro Ser Ile Glu Leu Pro
 230 235 240 245
 agc atg gcc gta gcc agt acc aag act ctt tgg gaa aca gga gaa gtg 1242
 Ser Met Ala Val Ala Ser Thr Lys Thr Leu Trp Glu Thr Gly Glu Val
 250 255 260
 cag agt cag tct gct tct aag aca ccc tcc tgc cag gat ata gta gct 1290
 Gln Ser Gln Ser Ala Ser Lys Thr Pro Ser Cys Gln Asp Ile Val Ala
 265 270 275
 gga gac atg agc aag aaa agt ctg tgg gag cag aaa gga ggc tcc aag 1338
 Gly Asp Met Ser Lys Lys Ser Leu Trp Glu Gln Lys Gly Gly Ser Lys
 280 285 290
 atc tca tcc acc atc aag agc acc cca tct gga aag cgg tac aag ttc 1386
 Ile Ser Ser Thr Ile Lys Ser Thr Pro Ser Gly Lys Arg Tyr Lys Phe
 295 300 305
 gtg gcc act gga cat ggg aag tac gag aaa gta ctt gtg gat gag ggc 1434
 Val Ala Thr Gly His Gly Lys Tyr Glu Lys Val Leu Val Asp Glu Gly
 310 315 320 325
 tca gca cca tag accatgtttg catcctggat agactccggc cggatgccac 1486
 Ser Ala Pro

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<210> 18

<211> 328

<212> PRT

<213> Mus musculus

<400> 18

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Glu	Ala	Ala	Arg	Glu	Gln	Arg	Gln	Arg	Glu	Arg	Glu	Arg	Gln	Leu	Gln
				35				40						45	
Asp	Gln	Asp	Lys	Asp	Lys	Glu	Asp	Asp	Gly	Gly	His	Ser	Leu	Glu	Gln
				50				55						60	
Pro	Gly	Gln	Gln	Thr	Leu	Ile	Ser	Leu	Lys	Ser	Ser	Glu	Leu	Asp	Glu
				65				70						75	
Asp	Glu	Gly	Phe	Gly	Asp	Trp	Ser	Gln	Lys	Pro	Glu	Pro	Arg	Gln	Gln
				85				90						95	
Phe	Trp	Gly	Asn	Glu	Gly	Thr	Ala	Glu	Gly	Thr	Glu	Pro	Ser	Gln	Ser
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Glu	Arg	Pro	Glu	Glu	Lys	Gln	Thr	Glu	Glu	Ser	Ser	His	Gln	Ala	Lys
				115				120						125	

Val His Leu Glu Glu Ser Asn Leu Ser Tyr Arg Glu Pro Asp Pro Glu
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 Asp Ala Val Gly Gly Ser Gly Glu Ala Glu Glu His Leu Ile Arg His
 145 150 155 160
 Gln Val Arg Thr Pro Ser Pro Leu Ala Leu Glu Asp Thr Val Glu Leu
 165 170 175
 Ser Ser Pro Pro Leu Ser Pro Thr Thr Lys Leu Ala Asp Arg Thr Glu
 180 185 190
 Ser Leu Asn Arg Ser Ile Lys Lys Ser Asn Ser Val Lys Lys Ser Gln
 195 200 205
 Pro Thr Leu Pro Ile Ser Thr Ile Asp Glu Arg Leu Gln Gln Tyr Thr
 210 215 220
 Gln Ala Thr Glu Ser Ser Gly Arg Thr Pro Lys Leu Ser Arg Gln Pro
 225 230 235 240
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 245 250 255
 Glu Thr Gly Glu Val Gln Ser Gln Ser Ala Ser Lys Thr Pro Ser Cys
 260 265 270
 Gln Asp Ile Val Ala Gly Asp Met Ser Lys Lys Ser Leu Trp Glu Gln
 275 280 285
 Lys Gly Gly Ser Lys Ile Ser Ser Thr Ile Lys Ser Thr Pro Ser Gly
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 305 310 315 320
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<210> 19

<211> 2170

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (24).. (1802)

<400> 19

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Arg Ser Gly Gly Arg Val Arg Leu Lys Ala His Tyr Gly Gly Asp Ile
      15                20                25
ctg att acc agc gtg gat gcc atg aca aca ttc aag gac ctc tgt gag 149
Leu Ile Thr Ser Val Asp Ala Met Thr Thr Phe Lys Asp Leu Cys Glu
      30                35                40
gaa gtg cga gac atg tgt ggc ctg cac cag cag cac cca ctc acc ctc 197
Glu Val Arg Asp Met Cys Gly Leu His Gln Gln His Pro Leu Thr Leu
      45                50                55
aag tgg gtg gac agt gaa ggt gac cct tgt act gtg tcc tca cag atg 245
Lys Trp Val Asp Ser Glu Gly Asp Pro Cys Thr Val Ser Ser Gln Met
      60                65                70
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Glu Leu Glu Glu Ala Phe Arg Leu Val Cys Gln Gly Arg Asp Glu Val
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ctc atc att cat gtt ttc cca agc atc cca gag cag ccg ggc atg cct 341
Leu Ile Ile His Val Phe Pro Ser Ile Pro Glu Gln Pro Gly Met Pro
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 Cys Pro Gly Glu Asp Lys Ser Ile Tyr Arg Arg Gly Ala Arg Arg Trp
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 Arg Lys Leu Tyr Arg Ala Asn Gly His Leu Phe Gln Ala Lys Arg Phe
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 aac agg gga gcg tac tgc ggc cag tgc agc gaa agg ata tgg ggt ctc 485
 Asn Arg Gly Ala Tyr Cys Gly Gln Cys Ser Glu Arg Ile Trp Gly Leu
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 Ser Arg Gln Gly Tyr Arg Cys Ile Asn Cys Lys Leu Leu Val His Lys
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 cgc tgc cac gtc ctc gtc ccg ctg acc tgc agg agg cat atg gat tct 581
 Arg Cys His Val Leu Val Pro Leu Thr Cys Arg Arg His Met Asp Ser
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 gtc atg cct tcc caa gag cct cca gta gat ggc aag aac gat ggt gta 629
 Val Met Pro Ser Gln Glu Pro Pro Val Asp Gly Lys Asn Asp Gly Val
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 gac ctt cct tca gaa gaa act gat gga att gct tat att tct tca tct 677
 Asp Leu Pro Ser Glu Glu Thr Asp Gly Ile Ala Tyr Ile Ser Ser Ser
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 Arg Lys His Asp Asn Ile Lys Asp Asp Ser Glu Asp Leu Lys Pro Val
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 Ile Asp Gly Val Asp Gly Ile Lys Ile Ser Gln Gly Leu Gly Leu Gln
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 Asp Phe Asp Leu Ile Arg Val Ile Gly Arg Gly Ser Tyr Ala Lys Val

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Leu Leu Val Arg Leu Lys Lys Asn Asp Gln Ile Tyr Ala Met Lys Val			
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gta aag aag gag ctt gtc cac gac gac gag gat atc gac tgg gtg cag	917		
Val Lys Lys Glu Leu Val His Asp Asp Glu Asp Ile Asp Trp Val Gln			
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aca gag aaa cat gtg ttt gag cag gcg tcc agc aac ccc ttc ctg gtt	965		
Thr Glu Lys His Val Phe Glu Gln Ala Ser Ser Asn Pro Phe Leu Val			
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Gly Leu His Ser Cys Phe Gln Thr Thr Ser Arg Leu Phe Leu Val Ile			
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Glu Tyr Val Asn Gly Gly Asp Leu Met Phe His Met Gln Arg Gln Arg			
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Lys Leu Pro Glu Glu His Ala Arg Phe Tyr Ala Ala Glu Ile Cys Ile			
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gct ctc aac ttc ttg cat gag agg ggg atc atc tac cgg gac cta aaa	1157		
Ala Leu Asn Phe Leu His Glu Arg Gly Ile Ile Tyr Arg Asp Leu Lys			
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ctg gac aac gtc ctc ctt gat gcc gac gga cac att aag ctg acg gac	1205		
Leu Asp Asn Val Leu Leu Asp Ala Asp Gly His Ile Lys Leu Thr Asp			
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tac ggc atg tgc aag gaa ggt cta ggc ccc ggt gat aca aca agc act	1253		
Tyr Gly Met Cys Lys Glu Gly Leu Gly Pro Gly Asp Thr Thr Ser Thr			
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Phe Cys Gly Thr Pro Asn Tyr Ile Ala Pro Glu Ile Leu Arg Gly Glu
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 Glu Tyr Gly Phe Ser Val Asp Trp Trp Ala Leu Gly Val Leu Met Phe
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 Glu Met Met Ala Gly Arg Ser Pro Phe Asp Ile Ile Thr Asp Asn Pro
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 gac atg aac act gaa gac tac ctt ttc caa gtt atc ctg gaa aag cca 1445
 Asp Met Asn Thr Glu Asp Tyr Leu Phe Gln Val Ile Leu Glu Lys Pro
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 Thr Gly Phe Ser Asp Ile Lys Ser His Ala Phe Phe Arg Ser Ile Asp
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575

580

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<212> PRT

<213> Mus musculus

<400> 20

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25

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Ala Met Thr Thr Phe Lys Asp Leu Cys Glu Glu Val Arg Asp Met Cys

35

40

45

Gly Leu His Gln Gln His Pro Leu Thr Leu Lys Trp Val Asp Ser Glu

50

55

60

Gly Asp Pro Cys Thr Val Ser Ser Gln Met Glu Leu Glu Glu Ala Phe

65

70

75

80

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 Asn Gly His Leu Phe Gln Ala Lys Arg Phe Asn Arg Gly Ala Tyr Cys
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 Cys Ile Asn Cys Lys Leu Leu Val His Lys Arg Cys His Val Leu Val
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 Pro Leu Thr Cys Arg Arg His Met Asp Ser Val Met Pro Ser Gln Glu
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 Pro Pro Val Asp Gly Lys Asn Asp Gly Val Asp Leu Pro Ser Glu Glu
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 Thr Asp Gly Ile Ala Tyr Ile Ser Ser Ser Arg Lys His Asp Asn Ile
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 Lys Asp Asp Ser Glu Asp Leu Lys Pro Val Ile Asp Gly Val Asp Gly
 225 230 235 240
 Ile Lys Ile Ser Gln Gly Leu Gly Leu Gln Asp Phe Asp Leu Ile Arg
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 Val Ile Gly Arg Gly Ser Tyr Ala Lys Val Leu Leu Val Arg Leu Lys
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 Lys Asn Asp Gln Ile Tyr Ala Met Lys Val Val Lys Lys Glu Leu Val
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 Gly Leu Gly Pro Gly Asp Thr Thr Ser Thr Phe Cys Gly Thr Pro Asn
 405 410 415
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 Ser Pro Phe Asp Ile Ile Thr Asp Asn Pro Asp Met Asn Thr Glu Asp
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 Pro Lys Glu Arg Leu Gly Cys Arg Pro Gln Thr Gly Phe Ser Asp Ile
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 515 520 525
 Lys Gln Thr Leu Pro Pro Phe Gln Pro Gln Ile Thr Asp Asp Tyr Gly
 530 535 540

Leu Asp Asn Phe Asp Thr Gln Phe Thr Ser Glu Pro Val Gln Leu Thr
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<212> DNA

<213> Mus musculus

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<213> Mus musculus

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<211> 221

<212> PRT

<213> Mus musculus

<400> 23

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 35 40 45
 Arg Thr Arg Phe Lys Ala Phe Val Ala Ile Gly Asp Tyr Asn Gly His

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 Tyr Trp Gly Asn Lys Ile Gly Lys Pro His Thr Val Pro Cys Lys Val
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 Thr Gly Arg Cys Gly Ser Val Leu Val Arg Leu Ile Pro Ala Pro Arg
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 Gly Thr Gly Ile Val Ser Ala Pro Val Pro Lys Lys Leu Leu Met Met
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 165 170 175
 Ser Tyr Leu Thr Pro Asp Leu Trp Lys Glu Thr Val Phe Thr Lys Ser
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<212> DNA

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Ala Glu Glu Ile Val Glu Glu Glu Thr Val Val Glu Glu Thr Gly Val
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Pro Val Gly Ala Asn Pro Val Gln Val Glu Met Gly Glu Phe Glu Asp
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Thr Pro Met Cys Val Cys Gln Asp Pro Thr Ser Cys Pro Ala Pro Ile
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Pro Cys Leu Asp Ser Glu Leu Thr Glu Phe Pro Leu Arg Met Arg Asp
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Trp Leu Lys Asn Val Leu Val Thr Leu Tyr Glu Arg Asp Glu Gly Asn
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Arg Asp Phe Glu Lys Asn Tyr Asn Met Tyr Ile Phe Pro Val His Trp
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Thr Glu Leu Ala Pro Leu Arg Ala Pro Leu Ile Pro Met Glu His Cys
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Thr Thr Arg Phe Phe Glu Thr Cys Asp Leu Asp Asn Asp Lys Tyr Ile
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 Ser Gln Val Val His Lys Ala Val Leu Asp Val Ala Glu Thr Gly Thr
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<212> PRT

<213> Mus musculus

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Leu Tyr Pro Leu Thr Val Tyr Phe Asn Arg Pro Phe Leu Ile Met Ile		
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75

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85

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90

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110

115

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<212> PRT

<213> Mus musculus

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35 40 45

Glu Pro Gly Cys Gly Cys Cys Met Thr Cys Ala Leu Ala Glu Gly Gln

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Glu Thr Tyr Ser Pro Lys Val Phe Arg Pro Lys His Thr Arg Ile Ser		125
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Gln Ser Lys Phe Val Gly Gly Ala Glu Asn Thr Ala His Pro Arg Val		160
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	180	185
Arg His Met Glu Ala Ser Leu Gln Glu Phe Lys Ala Ser Pro Arg Met		190
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<222> (227).. (889)

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Val Ser Leu Asp Val Gly Gly Lys Lys Glu Tyr Leu Ile Ala Gly Lys			
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Leu Ala Ser Leu Val Arg Pro Ala Asp Ala Cys Ser Cys Ser Pro Val

20 25 30

His Pro Gln Gln Ala Phe Cys Asn Ala Asp Val Val Ile Arg Ala Lys

35 40 45

Ala Val Ser Glu Lys Glu Val Asp Ser Gly Asn Asp Ile Tyr Gly Asn

50 55 60

Pro Ile Lys Arg Ile Gln Tyr Glu Ile Lys Gln Ile Lys Met Phe Lys

65	70	75	80
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Val Cys Gly Val Ser Leu Asp Val Gly Gly Lys Lys Glu Tyr Leu Ile			
	100	105	110
Ala Gly Lys Ala Glu Gly Asp Gly Lys Met His Ile Thr Leu Cys Asp			
	115	120	125
Phe Ile Val Pro Trp Asp Thr Leu Ser Ile Thr Gln Lys Lys Ser Leu			
	130	135	140
Asn His Arg Tyr Gln Met Gly Cys Glu Cys Lys Ile Thr Arg Cys Pro			
145	150	155	160
Met Ile Pro Cys Tyr Ile Ser Ser Pro Asp Glu Cys Leu Trp Met Asp			
	165	170	175
Trp Val Thr Glu Lys Ser Ile Asn Gly His Gln Ala Lys Phe Phe Ala			
	180	185	190
Cys Ile Lys Arg Ser Asp Gly Ser Cys Ala Trp Tyr Arg Gly Ala Ala			
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Pro Pro Lys Gln Glu Phe Leu Asp Ile Glu Asp Pro			
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<211> 4591

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<220>

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<222> (317).. (952)

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 ccggagctca tcgttggcca ccgtgcacag tgcccggtta aaccagcga gtgagctcgg 240
 actgtagcat cagcgctagc ctgggcaact ttgaagaaaa gagcggcagt ccccgagcg 300
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Met Thr Pro Trp Leu Gly Leu Val Val Leu Leu Ser

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 Cys Trp Ser Leu Gly His Trp Gly Ala Glu Ala Cys Thr Cys Ser Pro

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25

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 Ser His Pro Gln Asp Ala Phe Cys Asn Ser Asp Ile Val Ile Arg Ala

30

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 Lys Val Val Gly Lys Lys Leu Val Lys Glu Gly Pro Phe Gly Thr Leu

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gtc tac act att aag cag atg aag atg tac cga ggc ttc agt aag atg 544
 Val Tyr Thr Ile Lys Gln Met Lys Met Tyr Arg Gly Phe Ser Lys Met

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ccc cac gtg cag tac att cac acg gaa gcc tct gaa agt ctt tgt ggc 592
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ctc aag cta gaa gtc aac aaa tac cag tac ctg ctg aca ggg cgc gtg 640
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95

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 Tyr Glu Gly Lys Met Tyr Thr Gly Leu Cys Asn Phe Val Glu Arg Trp

110	115	120	
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Asp His Leu Thr Leu Ser Gln Arg Lys Gly Leu Asn Tyr Arg Tyr His			
125	130	135	140
ctg ggt tgc aat tgc aag atc aag tcc tgc tac tac ttg cct tgt ttt	784		
Leu Gly Cys Asn Cys Lys Ile Lys Ser Cys Tyr Tyr Leu Pro Cys Phe			
145	150	155	
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<212> PRT

<213> Mus musculus

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 35 40 45
 Lys Lys Leu Val Lys Glu Gly Pro Phe Gly Thr Leu Val Tyr Thr Ile
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 Lys Gln Met Lys Met Tyr Arg Gly Phe Ser Lys Met Pro His Val Gln
 65 70 75 80
 Tyr Ile His Thr Glu Ala Ser Glu Ser Leu Cys Gly Leu Lys Leu Glu
 85 90 95
 Val Asn Lys Tyr Gln Tyr Leu Leu Thr Gly Arg Val Tyr Glu Gly Lys
 100 105 110
 Met Tyr Thr Gly Leu Cys Asn Phe Val Glu Arg Trp Asp His Leu Thr
 115 120 125
 Leu Ser Gln Arg Lys Gly Leu Asn Tyr Arg Tyr His Leu Gly Cys Asn
 130 135 140
 Cys Lys Ile Lys Ser Cys Tyr Tyr Leu Pro Cys Phe Val Thr Ser Lys
 145 150 155 160
 Asn Glu Cys Leu Trp Thr Asp Met Leu Ser Asn Phe Gly Tyr Pro Gly
 165 170 175
 Tyr Gln Ser Lys His Tyr Ala Cys Ile Arg Gln Lys Gly Gly Tyr Cys
 180 185 190
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<222> (198).. (1169)

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ccggctgggc gggcggg atg gcg gcc gcg gcc cgg ggg agc ggc cgg gcg      230
      Met Ala Ala Ala Ala Arg Gly Ser Gly Arg Ala
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ccg acg cga agg ctg ctc gtg ctc ttg ctg ctt cag ttg ctc tgg gcc      278
Pro Thr Arg Arg Leu Leu Val Leu Leu Leu Leu Gln Leu Leu Trp Ala
              15              20              25
ccg gcc ggg gtc cgc gcc ggc ccg gag gaa gac ctg agc cat cgg aac      326
Pro Ala Gly Val Arg Ala Gly Pro Glu Glu Asp Leu Ser His Arg Asn
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cag gag ccg ccg gcg ccg ccc agc agc tgc agc ccg cag ccc gcg gcg      374
Gln Glu Pro Pro Ala Pro Pro Ser Ser Cys Ser Pro Gln Pro Ala Ala
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gtg cag ggc ctc gag ccg gcc cgg gcc gag aaa gga ttg aca cca gtc      422
Val Gln Gly Leu Glu Pro Ala Arg Ala Glu Lys Gly Leu Thr Pro Val
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gcc cca gtt cat acc aac aaa gaa gat gca gct gcc cag acg aat ctg      470

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Gly	Phe	Ile	His	Ala	Phe	Val	Ala	Ala	Ile	Ser	Val	Ile	Ile	Val	Ser	
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gaa	ctc	ggc	gac	aag	acg	ttt	ttc	ata	gct	gcc	atc	atg	gcg	atg	cgc	566
Glu	Leu	Gly	Asp	Lys	Thr	Phe	Phe	Ile	Ala	Ala	Ile	Met	Ala	Met	Arg	
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tat	aac	cgg	ctg	act	gtg	ctg	gcc	ggg	gcc	atg	ctg	gcc	ttg	gcc	ttg	614
Tyr	Asn	Arg	Leu	Thr	Val	Leu	Ala	Gly	Ala	Met	Leu	Ala	Leu	Ala	Leu	
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Arg	Val	Tyr	Thr	Tyr	Tyr	Val	Ser	Thr	Ala	Leu	Phe	Ala	Ile	Phe	Gly	
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Ile	Arg	Met	Leu	Arg	Glu	Gly	Leu	Lys	Met	Ser	Pro	Asp	Glu	Gly	Gln	
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gag	gag	cta	gaa	gaa	gtc	caa	gca	gag	tta	aag	aag	aag	gat	gaa	gaa	806
Glu	Glu	Leu	Glu	Glu	Val	Gln	Ala	Glu	Leu	Lys	Lys	Lys	Asp	Glu	Glu	
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ttc	caa	cga	acc	aaa	ctc	tta	aat	ggg	cca	gat	gtt	gaa	act	ggt	aca	854
Phe	Gln	Arg	Thr	Lys	Leu	Leu	Asn	Gly	Pro	Asp	Val	Glu	Thr	Gly	Thr	
									205					210		215
agc	aca	gca	ata	cct	cag	aaa	aag	tgg	tta	cat	ttt	att	tca	ccc	att	902
Ser	Thr	Ala	Ile	Pro	Gln	Lys	Lys	Trp	Leu	His	Phe	Ile	Ser	Pro	Ile	
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																235

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 tct caa ctc act acc att gtc ctg gca gct aga gag gac cct tat ggt 998
 Ser Gln Leu Thr Thr Ile Val Leu Ala Ala Arg Glu Asp Pro Tyr Gly
 255 260 265
 gta gcg gtg ggt ggc aca gtg gga cac tgc tta tgt act gga ttg gca 1046
 Val Ala Val Gly Gly Thr Val Gly His Cys Leu Cys Thr Gly Leu Ala
 270 275 280
 gta att gga gga agg atg ata gcg caa aag atc tct gtc cga act gtg 1094
 Val Ile Gly Gly Arg Met Ile Ala Gln Lys Ile Ser Val Arg Thr Val
 285 290 295
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 Thr Ile Ile Gly Gly Ile Val Phe Leu Ala Phe Ala Phe Ser Ala Leu
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 Phe Ile Ser Pro Glu Ser Gly Phe
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<212> PRT

<213> *Mus musculus*

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 Ala Gly Pro Glu Glu Asp Leu Ser His Arg Asn Gln Glu Pro Pro Ala
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 Pro Pro Ser Ser Cys Ser Pro Gln Pro Ala Ala Val Gln Gly Leu Glu
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 Pro Ala Arg Ala Glu Lys Gly Leu Thr Pro Val Ala Pro Val His Thr
 65 70 75 80
 Asn Lys Glu Asp Ala Ala Ala Gln Thr Asn Leu Gly Phe Ile His Ala
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 Phe Val Ala Ala Ile Ser Val Ile Ile Val Ser Glu Leu Gly Asp Lys
 100 105 110
 Thr Phe Phe Ile Ala Ala Ile Met Ala Met Arg Tyr Asn Arg Leu Thr
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 Val Leu Ala Gly Ala Met Leu Ala Leu Ala Leu Met Thr Cys Leu Ser
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 Val Leu Phe Gly Tyr Ala Thr Thr Val Ile Pro Arg Val Tyr Thr Tyr
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 Tyr Val Ser Thr Ala Leu Phe Ala Ile Phe Gly Ile Arg Met Leu Arg
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Glu Gly Leu Lys Met Ser Pro Asp Glu Gly Gln Glu Glu Leu Glu Glu
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 Val Gln Ala Glu Leu Lys Lys Lys Asp Glu Glu Phe Gln Arg Thr Lys
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 Leu Leu Asn Gly Pro Asp Val Glu Thr Gly Thr Ser Thr Ala Ile Pro
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 Gln Lys Lys Trp Leu His Phe Ile Ser Pro Ile Phe Val Gln Ala Leu
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 Thr Leu Thr Phe Leu Ala Glu Trp Gly Asp Arg Ser Gln Leu Thr Thr
 245 250 255
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 260 265 270
 Thr Val Gly His Cys Leu Cys Thr Gly Leu Ala Val Ile Gly Gly Arg
 275 280 285
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<222> (94).. (1773)

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Met Lys Arg Glu Leu Leu Cys

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gta ctg ctg ctt tgt gga ctg gct ttc cca ttg cct gac cag gga ata 162
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cat ggg agg ttc aga aga gga gcc cgg tcc tac aga gcg acc tgc aga 210
 His Gly Arg Phe Arg Arg Gly Ala Arg Ser Tyr Arg Ala Thr Cys Arg

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gat gag cca acg cag aca act tac caa cag cac cag tgc tgg ctc cga 258
 Asp Glu Pro Thr Gln Thr Thr Tyr Gln Gln His Gln Ser Trp Leu Arg

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ccc atg ctc aga agc agc cgg gtg gaa tat tgc cgg tgc aac agc ggc 306
 Pro Met Leu Arg Ser Ser Arg Val Glu Tyr Cys Arg Cys Asn Ser Gly

60

65

70

ctg gta caa tgc cac tca gig cct gtc cga agt tgc agc gaa cca aga 354
 Leu Val Gln Cys His Ser Val Pro Val Arg Ser Cys Ser Glu Pro Arg

75

80

85

tgc ttc aat ggg ggg acg tgt cag cag gcc ctg tat ttc tct gac ttt 402
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90

95

100

gtc tgc cag tgc cct gat gga ttt gta ggg aaa cgc tgt gac ata gat 450
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105

110

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acc aga gca aca tgc ttt gag gag cag ggc atc acc tac aga ggc acg 498
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155 160 165	
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Leu Gly Leu Gly Asn His Asn Tyr Cys Arg Asn Pro Asp Arg Asp Leu	
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Lys Pro Trp Cys Tyr Val Phe Lys Ala Gly Lys Tyr Thr Thr Glu Phe	
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Cys Ser Thr Pro Ala Cys Pro Lys Gly Lys Ser Glu Asp Cys Tyr Val	
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aca gcg tgg agg acc aac tcc cag gca ctc ggc ctg gca cga cac aat	882
Thr Ala Trp Arg Thr Asn Ser Gln Ala Leu Gly Leu Ala Arg His Asn	
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tat tgt cgg aat cca gat ggt gat gcc aga cct tgg tgc cat gtg atg	930
Tyr Cys Arg Asn Pro Asp Gly Asp Ala Arg Pro Trp Cys His Val Met	
265 270 275	
aag gac cga aag ctg acg tgg gaa tac tgt gac atg tcc cca tgc tcc	978
Lys Asp Arg Lys Leu Thr Trp Glu Tyr Cys Asp Met Ser Pro Cys Ser	

280	285	290	295	
acc tgt ggc ctg agg cag tac aaa cgg cct cag ttt aga att aaa gga	1026			
Thr Cys Gly Leu Arg Gln Tyr Lys Arg Pro Gln Phe Arg Ile Lys Gly				
300	305	310		
gga ctc tac aca gac atc acc tca cac cct tgg cag gct gcc atc ttt	1074			
Gly Leu Tyr Thr Asp Ile Thr Ser His Pro Trp Gln Ala Ala Ile Phe				
315	320	325		
gtc aag aac aag agg tct cct gga gag aga ttc ctt tgt gga ggg gtg	1122			
Val Lys Asn Lys Arg Ser Pro Gly Glu Arg Phe Leu Cys Gly Gly Val				
330	335	340		
ctg atc agt tcc tgc tgg gtg ctg tca gct gcc cac tgc ttt cta gag	1170			
Leu Ile Ser Ser Cys Trp Val Leu Ser Ala Ala His Cys Phe Leu Glu				
345	350	355		
agg ttc ccc ccc aat cat ctt aaa gtg gtc ttg ggc aga aca tac agg	1218			
Arg Phe Pro Pro Asn His Leu Lys Val Val Leu Gly Arg Thr Tyr Arg				
360	365	370	375	
gtg gtc ccc gga gag gaa gaa cag aca ttt gag att gaa aaa tac ata	1266			
Val Val Pro Gly Glu Glu Glu Gln Thr Phe Glu Ile Glu Lys Tyr Ile				
380	385	390		
gtc cat gag gaa ttt gat gac gat act tat gac aac gac atc gca tta	1314			
Val His Glu Glu Phe Asp Asp Asp Thr Tyr Asp Asn Asp Ile Ala Leu				
395	400	405		
ctg cag ctg agg tca cag tcc aag caa tgt gcc caa gag agc agc tct	1362			
Leu Gln Leu Arg Ser Gln Ser Lys Gln Cys Ala Gln Glu Ser Ser Ser				
410	415	420		
gtt ggc act gcc tgc ctc cct gac ccc aac ctg cag ctc cct gac tgg	1410			
Val Gly Thr Ala Cys Leu Pro Asp Pro Asn Leu Gln Leu Pro Asp Trp				
425	430	435		
aca gag tgt gag ctt tct ggc tac ggc aag cat gag gca tcg tct cca	1458			

Thr Glu Cys Glu Leu Ser Gly Tyr Gly Lys His Glu Ala Ser Ser Pro
 440 445 450 455
 ttc ttc tct gac cgg ctg aag gag gct cac gtc aga ctg tac ccg tcc 1506
 Phe Phe Ser Asp Arg Leu Lys Glu Ala His Val Arg Leu Tyr Pro Ser
 460 465 470
 agc cgc tgc acc tca cag cat ctg ttt aat aaa acc gtc acg aac aac 1554
 Ser Arg Cys Thr Ser Gln His Leu Phe Asn Lys Thr Val Thr Asn Asn
 475 480 485
 atg ctg tgc gct gga gac acc cgg agc gga ggc aac caa gac ctc cac 1602
 Met Leu Cys Ala Gly Asp Thr Arg Ser Gly Gly Asn Gln Asp Leu His
 490 495 500
 gat gca tgc cag ggt gac tcg gga ggc cct ctg gtg tgc atg atc aat 1650
 Asp Ala Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Met Ile Asn
 505 510 515
 aaa cag atg aca ttg act ggc att atc agc tgg ggc ctc ggc tgt ggg 1698
 Lys Gln Met Thr Leu Thr Gly Ile Ile Ser Trp Gly Leu Gly Cys Gly
 520 525 530 535
 cag aag gat gtg cct ggg gtc tac aca aag gtt acg aat tac cta gac 1746
 Gln Lys Asp Val Pro Gly Val Tyr Thr Lys Val Thr Asn Tyr Leu Asp
 540 545 550
 tgg att cac gac aac atg aag caa tga caaagaaagc ccagctcctt 1793
 Trp Ile His Asp Asn Met Lys Gln
 555 560
 caatccagag gaggacctgc ctccctcttc ctcttctaca gaagatgcgc ctaaaaggcc 1853
 aagcattctt tacaccaatca tcttcgtgag ctgccactcg ggagagggga ggggggtctt 1913
 tgggagcaga tgtagcattt accgtgaca ggtacttcac aacttgtaag tttaaggaat 1973
 gaaggtctgg ctttgaataaatccgtgca gatgagatga caggagatg ccaaccttcc 2033
 ataactctag gattttaaaa agaggagtag accaaagtct gccctcctgg tccactatgt 2093
 tgtacactga accacaagat catgtctcaa cagcaaaaaa tacaacttga tctttcagga 2153

gtgaaagttt gcactgggga caagaatgtg tttttatagt tacacagggc cacagggcct 2213
 ccacgagaag gaaggggiat ctggccgaat cacagcacca taaaatcctt gagatcatgc 2273
 actccccatc cctccacact ccicaacict tgggacatat cctttgtata cagtgtaaat 2333
 gtctttttct ttataaactc tatagatggg tgggagaact gtaigatitit aataattgat 2393
 gaataacact agtatattta tatitttaate tatttttagat ttacttttgt tactataact 2453
 ttgtattata ctgtacttaa ataataaatt cagaggtiatt tttcacactt taaaaaaaaa 2513
 aaaaaa 2519

<210> 41

<211> 559

<212> PRT

<213> Mus musculus

<400> 41

Met	Lys	Arg	Glu	Leu	Leu	Cys	Val	Leu	Leu	Leu	Cys	Gly	Leu	Ala	Phe
1				5					10				15		
Pro	Leu	Pro	Asp	Gln	Gly	Ile	His	Gly	Arg	Phe	Arg	Arg	Gly	Ala	Arg
				20				25					30		
Ser	Tyr	Arg	Ala	Thr	Cys	Arg	Asp	Glu	Pro	Thr	Gln	Thr	Thr	Tyr	Gln
				35				40					45		
Gln	His	Gln	Ser	Trp	Leu	Arg	Pro	Met	Leu	Arg	Ser	Ser	Arg	Val	Glu
				50				55					60		
Tyr	Cys	Arg	Cys	Asn	Ser	Gly	Leu	Val	Gln	Cys	His	Ser	Val	Pro	Val
				65				70					75		80
Arg	Ser	Cys	Ser	Glu	Pro	Arg	Cys	Phe	Asn	Gly	Gly	Thr	Cys	Gln	Gln
				85				90					95		
Ala	Leu	Tyr	Phe	Ser	Asp	Phe	Val	Cys	Gln	Cys	Pro	Asp	Gly	Phe	Val
				100				105					110		
Gly	Lys	Arg	Cys	Asp	Ile	Asp	Thr	Arg	Ala	Thr	Cys	Phe	Glu	Glu	Gln

115	120	125
Gly Ile Thr Tyr Arg Gly Thr Trp Ser Thr Ala Glu Ser Gly Ala Glu		
130	135	140
Cys Ile Asn Trp Asn Ser Ser Val Leu Ser Leu Lys Pro Tyr Asn Ala		
145	150	155
Arg Arg Pro Asn Ala Ile Lys Leu Gly Leu Gly Asn His Asn Tyr Cys		
165	170	175
Arg Asn Pro Asp Arg Asp Leu Lys Pro Trp Cys Tyr Val Phe Lys Ala		
180	185	190
Gly Lys Tyr Thr Thr Glu Phe Cys Ser Thr Pro Ala Cys Pro Lys Gly		
195	200	205
Lys Ser Glu Asp Cys Tyr Val Gly Lys Gly Val Thr Tyr Arg Gly Thr		
210	215	220
His Ser Leu Thr Thr Ser Gln Ala Ser Cys Leu Pro Trp Asn Ser Ile		
225	230	235
Val Leu Met Gly Lys Ser Tyr Thr Ala Trp Arg Thr Asn Ser Gln Ala		
245	250	255
Leu Gly Leu Ala Arg His Asn Tyr Cys Arg Asn Pro Asp Gly Asp Ala		
260	265	270
Arg Pro Trp Cys His Val Met Lys Asp Arg Lys Leu Thr Trp Glu Tyr		
275	280	285
Cys Asp Met Ser Pro Cys Ser Thr Cys Gly Leu Arg Gln Tyr Lys Arg		
290	295	300
Pro Gln Phe Arg Ile Lys Gly Gly Leu Tyr Thr Asp Ile Thr Ser His		
305	310	315
Pro Trp Gln Ala Ala Ile Phe Val Lys Asn Lys Arg Ser Pro Gly Glu		
325	330	335
Arg Phe Leu Cys Gly Gly Val Leu Ile Ser Ser Cys Trp Val Leu Ser		
340	345	350

Ala Ala His Cys Phe Leu Glu Arg Phe Pro Pro Asn His Leu Lys Val
 355 360 365
 Val Leu Gly Arg Thr Tyr Arg Val Val Pro Gly Glu Glu Glu Gln Thr
 370 375 380
 Phe Glu Ile Glu Lys Tyr Ile Val His Glu Glu Phe Asp Asp Asp Thr
 385 390 395 400
 Tyr Asp Asn Asp Ile Ala Leu Leu Gln Leu Arg Ser Gln Ser Lys Gln
 405 410 415
 Cys Ala Gln Glu Ser Ser Ser Val Gly Thr Ala Cys Leu Pro Asp Pro
 420 425 430
 Asn Leu Gln Leu Pro Asp Trp Thr Glu Cys Glu Leu Ser Gly Tyr Gly
 435 440 445
 Lys His Glu Ala Ser Ser Pro Phe Phe Ser Asp Arg Leu Lys Glu Ala
 450 455 460
 His Val Arg Leu Tyr Pro Ser Ser Arg Cys Thr Ser Gln His Leu Phe
 465 470 475 480
 Asn Lys Thr Val Thr Asn Asn Met Leu Cys Ala Gly Asp Thr Arg Ser
 485 490 495
 Gly Gly Asn Gln Asp Leu His Asp Ala Cys Gln Gly Asp Ser Gly Gly
 500 505 510
 Pro Leu Val Cys Met Ile Asn Lys Gln Met Thr Leu Thr Gly Ile Ile
 515 520 525
 Ser Trp Gly Leu Gly Cys Gly Gln Lys Asp Val Pro Gly Val Tyr Thr
 530 535 540
 Lys Val Thr Asn Tyr Leu Asp Trp Ile His Asp Asn Met Lys Gln
 545 550 555

<210> 42

<211> 1391

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (271).. (1311)

<400> 42

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 ccaccatggc gtattagagg cagcagtgcc tgcggcagcg ttggcctttg cagcggcggc 120
 agcagcacca ggctctgcag cggcaacccc caccggccta agccatggcg ctcttcacga 180
 aatccagcag cagtgttgct gtaacggaca aagatacctt cgagttaagc acattcctgg 240
 aatccagcaa agccccacaa catgaccgag atg agc ttc ctg aac agc gaa gtg 294

Met Ser Phe Leu Asn Ser Glu Val

1

5

ttg gcg ggg gac ttg atg tcc ccc ttc gac cag tcg ggt ttg ggg gct 342
 Leu Ala Gly Asp Leu Met Ser Pro Phe Asp Gln Ser Gly Leu Gly Ala

10

15

20

gaa gaa agc cta ggt ctc tta gat gac tat ctg gag gtg gcc aag cac 390
 Glu Glu Ser Leu Gly Leu Leu Asp Asp Tyr Leu Glu Val Ala Lys His

25

30

35

40

ttg aaa cct cat ggg ttc tcc agc gac aag gcg ggc tcc tcg gaa tgg 438
 Leu Lys Pro His Gly Phe Ser Ser Asp Lys Ala Gly Ser Ser Glu Trp

45

50

55

ccg gct atg gat gat ggc ttg gcc agt gcc tca gac acc ggc aag gag 486
 Pro Ala Met Asp Asp Gly Leu Ala Ser Ala Ser Asp Thr Gly Lys Glu

60

65

70

gat gcc ttt tcc ggg aca gat tgg atg ttg gag aaa atg gat ctg aaa 534
 Asp Ala Phe Ser Gly Thr Asp Trp Met Leu Glu Lys Met Asp Leu Lys

75	80	85	
gag ttt gac ttc gat gct ctg ttt cga atg gat gac ctg gaa acc atg			582
Glu Phe Asp Phe Asp Ala Leu Phe Arg Met Asp Asp Leu Glu Thr Met			
90	95	100	
cca gat gag ctc ttg acc acg ttg gat gac aca tgt gat ctt ttt gcc			630
Pro Asp Glu Leu Leu Thr Thr Leu Asp Asp Thr Cys Asp Leu Phe Ala			
105	110	115	120
cct cta gtc caa gag act aat aag gag ccc cct cag aca gtg aac cca			678
Pro Leu Val Gln Glu Thr Asn Lys Glu Pro Pro Gln Thr Val Asn Pro			
125	130	135	
att ggc cat ctc cca gaa agt tta ata aaa gtc gac cag gtt gcc ccc			726
Ile Gly His Leu Pro Glu Ser Leu Ile Lys Val Asp Gln Val Ala Pro			
140	145	150	
ttt aca ttc ttg cag cct ttc ccc tgt tcc cca ggg gtt ctg tct tcc			774
Phe Thr Phe Leu Gln Pro Phe Pro Cys Ser Pro Gly Val Leu Ser Ser			
155	160	165	
act cca gag cat tcc ttt agt tta gag cta ggc agt gaa gtt gat atc			822
Thr Pro Glu His Ser Phe Ser Leu Glu Leu Gly Ser Glu Val Asp Ile			
170	175	180	
tct gaa gga gac agg aag cct gac tct gct gct tac att act cta atc			870
Ser Glu Gly Asp Arg Lys Pro Asp Ser Ala Ala Tyr Ile Thr Leu Ile			
185	190	195	200
cct cca tgt gta aag gag gaa gac act ccc tct gac aat gac agt ggc			918
Pro Pro Cys Val Lys Glu Glu Asp Thr Pro Ser Asp Asn Asp Ser Gly			
205	210	215	
atc tgt atg agc ccg gag tcc tac ctg ggc tct ccc cag cat agc ccc			966
Ile Cys Met Ser Pro Glu Ser Tyr Leu Gly Ser Pro Gln His Ser Pro			
220	225	230	
tcc acc tcc agg gcc cca cca gac aat ctg cct tct cca ggt ggt tcc			1014

Ser Thr Ser Arg Ala Pro Pro Asp Asn Leu Pro Ser Pro Gly Gly Ser
 235 240 245
 cgt ggg tct cct cgg ccc aaa cct tat gac cca cct gga gtt agt ttg 1062
 Arg Gly Ser Pro Arg Pro Lys Pro Tyr Asp Pro Pro Gly Val Ser Leu
 250 255 260
 aca gct aaa gtg aag act gag aaa ttg gat aag aag ctg aaa aag atg 1110
 Thr Ala Lys Val Lys Thr Glu Lys Leu Asp Lys Lys Leu Lys Lys Met
 265 270 275 280
 gag caa aac aag aca gca gcc act agg tac cgc cag aag aag cgg gct 1158
 Glu Gln Asn Lys Thr Ala Ala Thr Arg Tyr Arg Gln Lys Lys Arg Ala
 285 290 295
 gag cag gag gcc ctc act ggc gag tgt aag gag cta gaa aaa aag aat 1206
 Glu Gln Glu Ala Leu Thr Gly Glu Cys Lys Glu Leu Glu Lys Lys Asn
 300 305 310
 gag gct ctg aaa gag aag gca gat tct ctg gcc aag gag atc cag tat 1254
 Glu Ala Leu Lys Glu Lys Ala Asp Ser Leu Ala Lys Glu Ile Gln Tyr
 315 320 325
 ctg aaa gac ctg ata gaa gag gtc cgt aag gca agg ggg aag aag aga 1302
 Leu Lys Asp Leu Ile Glu Glu Val Arg Lys Ala Arg Gly Lys Lys Arg
 330 335 340
 gtt ccg taa tagggtagtc aggtgccttg tgcttgtaca tagtcttgtg 1351
 Val Pro
 345
 ttgctgtgtt tgctgtaata aattattttg tagtgaaagt 1391

<210> 43

<211> 346

<212> PRT

<213> Mus musculus

<400> 43

Met Ser Phe Leu Asn Ser Glu Val Leu Ala Gly Asp Leu Met Ser Pro
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 Phe Asp Gln Ser Gly Leu Gly Ala Glu Glu Ser Leu Gly Leu Leu Asp
 20 25 30
 Asp Tyr Leu Glu Val Ala Lys His Leu Lys Pro His Gly Phe Ser Ser
 35 40 45
 Asp Lys Ala Gly Ser Ser Glu Trp Pro Ala Met Asp Asp Gly Leu Ala
 50 55 60
 Ser Ala Ser Asp Thr Gly Lys Glu Asp Ala Phe Ser Gly Thr Asp Trp
 65 70 75 80
 Met Leu Glu Lys Met Asp Leu Lys Glu Phe Asp Phe Asp Ala Leu Phe
 85 90 95
 Arg Met Asp Asp Leu Glu Thr Met Pro Asp Glu Leu Leu Thr Thr Leu
 100 105 110
 Asp Asp Thr Cys Asp Leu Phe Ala Pro Leu Val Gln Glu Thr Asn Lys
 115 120 125
 Glu Pro Pro Gln Thr Val Asn Pro Ile Gly His Leu Pro Glu Ser Leu
 130 135 140
 Ile Lys Val Asp Gln Val Ala Pro Phe Thr Phe Leu Gln Pro Phe Pro
 145 150 155 160
 Cys Ser Pro Gly Val Leu Ser Ser Thr Pro Glu His Ser Phe Ser Leu
 165 170 175
 Glu Leu Gly Ser Glu Val Asp Ile Ser Glu Gly Asp Arg Lys Pro Asp
 180 185 190
 Ser Ala Ala Tyr Ile Thr Leu Ile Pro Pro Cys Val Lys Glu Glu Asp
 195 200 205
 Thr Pro Ser Asp Asn Asp Ser Gly Ile Cys Met Ser Pro Glu Ser Tyr

210 215 220
 Leu Gly Ser Pro Gln His Ser Pro Ser Thr Ser Arg Ala Pro Pro Asp
 225 230 235 240
 Asn Leu Pro Ser Pro Gly Gly Ser Arg Gly Ser Pro Arg Pro Lys Pro
 245 250 255
 Tyr Asp Pro Pro Gly Val Ser Leu Thr Ala Lys Val Lys Thr Glu Lys
 260 265 270
 Leu Asp Lys Lys Leu Lys Lys Met Glu Gln Asn Lys Thr Ala Ala Thr
 275 280 285
 Arg Tyr Arg Gln Lys Lys Arg Ala Glu Gln Glu Ala Leu Thr Gly Glu
 290 295 300
 Cys Lys Glu Leu Glu Lys Lys Asn Glu Ala Leu Lys Glu Lys Ala Asp
 305 310 315 320
 Ser Leu Ala Lys Glu Ile Gln Tyr Leu Lys Asp Leu Ile Glu Glu Val
 325 330 335
 Arg Lys Ala Arg Gly Lys Lys Arg Val Pro
 340 345

<210> 44

<211> 3161

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (662).. (3013)

<400> 44

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 tgagtagcgg cgcggggggt cggagcaggg tttagggcgc ccctgaagaa tcgcggcigg 120

cggcacgctg ctgccgcgga gcagctcgcg tccacacgga gctgagggcg gtggaggcgg 180
 caggccctggc ggcccccgga gccggccctt gcctcagggt tgcgtgactg aaccctcaga 240
 agtgggaccc cgccccggag tcccgcgctt gacagtgac cttgatctta cctgtcaccc 300
 aggcctcccc gcgtccctgga gccttctcat acaacctttt gacacctaag gcagagtgtg 360
 ttgagtgcga ggcactgaaa tgacctggat ggtctttcat cctagaacag taccgttacg 420
 tggatgatga tggttgcgtt ttacggaaaa cactgaggta aactaagtta cccaaaacct 480
 tacaggaatg acagaaacga cagtgtattc aggcagaatc cttccgacct accgggacct 540
 actctgaaac actaacgatt agacttaagt gticggaaaa gacagaccga cagaccgacc 600
 gtagctttct gtgtcccgag gtgtcttgaa ttgtttttct ttttgcagtg ttttaactca 660
 a atg ggt gat gaa aag gac tct tgg aaa gtg aaa acg tta gat gaa att 709

Met Gly Asp Glu Lys Asp Ser Trp Lys Val Lys Thr Leu Asp Glu Ile

1	5	10	15	
ctc	cag	gaa	aag	aaa cga agg aaa gaa caa gag gag aaa gca gag ata 757
Leu	Gln	Glu	Lys	Lys Arg Arg Lys Glu Gln Glu Glu Lys Ala Glu Ile
20	25	30		
aaa	cgc	tta	aaa	aat tct gat gac cgc gat tcc aaa agg gat tcc ctt 805
Lys	Arg	Leu	Lys	Asn Ser Asp Asp Arg Asp Ser Lys Arg Asp Ser Leu
35	40	45		
gag	gag	ggg	gag	ctg aga gat cac cga atg gag atc aca atc agg aac 853
Glu	Glu	Gly	Glu	Leu Arg Asp His Arg Met Glu Ile Thr Ile Arg Asn
50	55	60		
tca	cca	tat	aga	aga gag gat tct atg gaa gac aga gga gag gag gat 901
Ser	Pro	Tyr	Arg	Arg Glu Asp Ser Met Glu Asp Arg Gly Glu Glu Asp
65	70	75	80	
gat	tct	ctg	gcc	atc aaa cca ccc cag caa atg tct cgg aaa gaa aag 949
Asp	Ser	Leu	Ala	Ile Lys Pro Pro Gln Gln Met Ser Arg Lys Glu Lys
85	90	95		
gct	cat	cac	aga	aaa gac gag aaa aga aaa gag aaa cgt cga cat cgt 997
Ala	His	His	Arg	Lys Asp Glu Lys Arg Lys Glu Lys Arg Arg His Arg

100	105	110	
agc cat tca gca gag gga ggg aaa cat gcc aga gtg aaa gag aaa gaa	1045		
Ser His Ser Ala Glu Gly Gly Lys His Ala Arg Val Lys Glu Lys Glu			
115	120	125	
agg gag cac gaa cgc cgg aaa cgc cac cga gaa gaa caa gat aaa gct	1093		
Arg Glu His Glu Arg Arg Lys Arg His Arg Glu Glu Gln Asp Lys Ala			
130	135	140	
cga agg gag tgg gaa aga cag aag agg agg gaa atg gcg aga gaa cat	1141		
Arg Arg Glu Trp Glu Arg Gln Lys Arg Arg Glu Met Ala Arg Glu His			
145	150	155	160
tcc aga aga gag agg gac cgc ctg gag cag tta gaa agg aag agg gag	1189		
Ser Arg Arg Glu Arg Asp Arg Leu Glu Gln Leu Glu Arg Lys Arg Glu			
165	170	175	
cgg gag cgc aag ctg agg gag cag cag aag gag cag cgg gag cag aag	1237		
Arg Glu Arg Lys Leu Arg Glu Gln Gln Lys Glu Gln Arg Glu Gln Lys			
180	185	190	
gag cgg gaa cgg agg gca gag gag cgc cgc aaa gag aga gaa gcg cgt	1285		
Glu Arg Glu Arg Arg Ala Glu Glu Arg Arg Lys Glu Arg Glu Ala Arg			
195	200	205	
agg gaa gtc tct gca cat cac cgt acc atg agg gag gag tac agt gat	1333		
Arg Glu Val Ser Ala His His Arg Thr Met Arg Glu Glu Tyr Ser Asp			
210	215	220	
aag ggg aag gtt ggc cac tgg agc cgc agc cct ctg agg cca cca aga	1381		
Lys Gly Lys Val Gly His Trp Ser Arg Ser Pro Leu Arg Pro Pro Arg			
225	230	235	240
gag cgc ttt gag atg gga gac aac cgg aag cca gta aaa gaa gag aag	1429		
Glu Arg Phe Glu Met Gly Asp Asn Arg Lys Pro Val Lys Glu Glu Lys			
245	250	255	
gtg gaa gag aga gac ttg ttg tca gac ctc caa gac atc agt gac agc	1477		

Val Glu Glu Arg Asp Leu Leu Ser Asp Leu Gln Asp Ile Ser Asp Ser
 260 265 270
 gag agg aaa acc agc tca gct gag tct tca tca gaa tca ggc tca ggt 1525
 Glu Arg Lys Thr Ser Ser Ala Glu Ser Ser Ser Glu Ser Gly Ser Gly
 275 280 285
 tct gaa gag gag gag gag gaa gaa gaa gag gaa gaa gaa gaa gaa ggg 1573
 Ser Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Gly
 290 295 300
 agc acc agt gaa gaa tca gag gaa gaa gag gaa gaa gaa gag gag gag 1621
 Ser Thr Ser Glu Glu Ser Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu
 305 310 315 320
 gaa gaa gag gag act ggg agc aac tct gag gag gcc tct gaa cag tcc 1669
 Glu Glu Glu Glu Thr Gly Ser Asn Ser Glu Glu Ala Ser Glu Gln Ser
 325 330 335
 gca gaa gaa gtc agt gat gag gaa atg agt gaa gat gaa gac aga gaa 1717
 Ala Glu Glu Val Ser Asp Glu Glu Met Ser Glu Asp Glu Asp Arg Glu
 340 345 350
 aac gag aac cac atc ttg gtt gtt cca gag tca cga ttt gac cga gat 1765
 Asn Glu Asn His Ile Leu Val Val Pro Glu Ser Arg Phe Asp Arg Asp
 355 360 365
 tct ggg gac agt gaa gaa ggg gag gaa gaa gtt ggt gaa ggg act cca 1813
 Ser Gly Asp Ser Glu Glu Gly Glu Glu Glu Val Gly Glu Gly Thr Pro
 370 375 380
 cag agc agt gcc ccc acc gaa gga gac tat gtt cct gac tct cca gca 1861
 Gln Ser Ser Ala Pro Thr Glu Gly Asp Tyr Val Pro Asp Ser Pro Ala
 385 390 395 400
 ctg tca cct att gag cta aaa caa gaa ctg ccc aaa tac ctg cca gcc 1909
 Leu Ser Pro Ile Glu Leu Lys Gln Glu Leu Pro Lys Tyr Leu Pro Ala
 405 410 415

ctg cag gga tgc agg agt gta gag gag ttt cag tgt ctg aac agg att 1957
 Leu Gln Gly Cys Arg Ser Val Glu Glu Phe Gln Cys Leu Asn Arg Ile
 420 425 430
 gaa gaa ggc acc tat ggg gtg gtc tac aga gca aag gac aag aaa aca 2005
 Glu Glu Gly Thr Tyr Gly Val Val Tyr Arg Ala Lys Asp Lys Lys Thr
 435 440 445
 gat gaa att gtg gct ctg aag cgg tta aag atg gag aag gag aag gaa 2053
 Asp Glu Ile Val Ala Leu Lys Arg Leu Lys Met Glu Lys Glu Lys Glu
 450 455 460
 ggc ttc cca atc acg tcg ctg agg gaa atc aac acc atc ctc aag gcc 2101
 Gly Phe Pro Ile Thr Ser Leu Arg Glu Ile Asn Thr Ile Leu Lys Ala
 465 470 475 480
 cag cac ccc aac atc gtc acc gtc agg gaa att gtt gtg gga agt aac 2149
 Gln His Pro Asn Ile Val Thr Val Arg Glu Ile Val Val Gly Ser Asn
 485 490 495
 atg gac aag atc tac att gtg atg aac tac gtg gaa cat gac ctc aag 2197
 Met Asp Lys Ile Tyr Ile Val Met Asn Tyr Val Glu His Asp Leu Lys
 500 505 510
 agc cta atg gag acc atg aag cag ccc ttc ctg cca ggg gag gtg aag 2245
 Ser Leu Met Glu Thr Met Lys Gln Pro Phe Leu Pro Gly Glu Val Lys
 515 520 525
 acc ctg atg att cag ctg ctg agt ggg gta aag cac ctc cat gac aat 2293
 Thr Leu Met Ile Gln Leu Leu Ser Gly Val Lys His Leu His Asp Asn
 530 535 540
 tgg atc cta cac cgt gac ctg aag acc tct aac ctc ctg ctg agc cat 2341
 Trp Ile Leu His Arg Asp Leu Lys Thr Ser Asn Leu Leu Leu Ser His
 545 550 555 560
 gct ggc att ctc aag gtg ggc gac ttt ggg ctg gct cgg gag tat ggt 2389
 Ala Gly Ile Leu Lys Val Gly Asp Phe Gly Leu Ala Arg Glu Tyr Gly

565	570	575	
tca ccc cta aag gcc tac act cca gtt gtt gta acc ctg tgg tat cgt	2437		
Ser Pro Leu Lys Ala Tyr Thr Pro Val Val Val Thr Leu Trp Tyr Arg			
580	585	590	
gcc cca gaa cta ctg ctt ggt gct aag gaa tac tcc aca gct gtg gac	2485		
Ala Pro Glu Leu Leu Leu Gly Ala Lys Glu Tyr Ser Thr Ala Val Asp			
595	600	605	
atg tgg tgc gta ggc tgc ata ttt gga gaa ctg ctg aca cag aaa cct	2533		
Met Trp Ser Val Gly Cys Ile Phe Gly Glu Leu Leu Thr Gln Lys Pro			
610	615	620	
ctg ttc cct ggg aag tca gat att gat cag att aac aag att ttc aag	2581		
Leu Phe Pro Gly Lys Ser Asp Ile Asp Gln Ile Asn Lys Ile Phe Lys			
625	630	635	640
gac ctg ggt act cct agt gag aaa atc tgg cct ggc tat aat gac ctc	2629		
Asp Leu Gly Thr Pro Ser Glu Lys Ile Trp Pro Gly Tyr Asn Asp Leu			
645	650	655	
cca gcc gtc aag aag atg acc ttc agc gag tat ccc tat aac aac ctc	2677		
Pro Ala Val Lys Lys Met Thr Phe Ser Glu Tyr Pro Tyr Asn Asn Leu			
660	665	670	
cgc aag aga ttt ggg gct ttg tta tca gat caa ggc ttt gat ctc atg	2725		
Arg Lys Arg Phe Gly Ala Leu Leu Ser Asp Gln Gly Phe Asp Leu Met			
675	680	685	
aac aag ttc ctg aca tac tac cct ggc agg agg atc aac gca gaa gat	2773		
Asn Lys Phe Leu Thr Tyr Tyr Pro Gly Arg Arg Ile Asn Ala Glu Asp			
690	695	700	
ggc ctc aag cac gaa tat ttc cga gag act ccc ctc ccc atc gac cca	2821		
Gly Leu Lys His Glu Tyr Phe Arg Glu Thr Pro Leu Pro Ile Asp Pro			
705	710	715	720
tcc atg ttc ccc acg tgg cct gcc aag agt gag cag cag aga gtg aag	2869		

Ser Met Phe Pro Thr Trp Pro Ala Lys Ser Glu Gln Gln Arg Val Lys
 725 730 735
 cga ggc acg agt cca cgg cct cct gag ggc ggc ctg ggc tac agc cag 2917
 Arg Gly Thr Ser Pro Arg Pro Pro Glu Gly Gly Leu Gly Tyr Ser Gln
 740 745 750
 ctg ggt gat gat gac ctg aag gag acg ggc ttc cac ctc acc acc acc 2965
 Leu Gly Asp Asp Asp Leu Lys Glu Thr Gly Phe His Leu Thr Thr Thr
 755 760 765
 aac cag gga gcc tca gct gca ggc cct ggc ttc agc ctc aag ttc tga 3013
 Asn Gln Gly Ala Ser Ala Ala Gly Pro Gly Phe Ser Leu Lys Phe
 770 775 780
 ggtaggcttg atggacgtgg cccgactagg tggtagacagc cagacctgct gatgctgaat 3073
 cagggaact tggttgtttt ttccacgttg ttgttttgg ggcaggttgt aaattttag 3133
 aattaaatga aattttcctt ttggaggg 3161

<210> 45

<211> 783

<212> PRT

<213> Mus musculus

<400> 45

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 Leu Gln Glu Lys Lys Arg Arg Lys Glu Gln Glu Glu Lys Ala Glu Ile
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 Lys Arg Leu Lys Asn Ser Asp Asp Arg Asp Ser Lys Arg Asp Ser Leu
 35 40 45
 Glu Glu Gly Glu Leu Arg Asp His Arg Met Glu Ile Thr Ile Arg Asn
 50 55 60

111/2644-

290	295	300
Ser Thr Ser Glu Glu Ser Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu		
305	310	315
Glu Glu Glu Glu Thr Gly Ser Asn Ser Glu Glu Ala Ser Glu Gln Ser		320
	325	330
Ala Glu Glu Val Ser Asp Glu Glu Met Ser Glu Asp Glu Asp Arg Glu		335
	340	345
Asn Glu Asn His Ile Leu Val Val Pro Glu Ser Arg Phe Asp Arg Asp		350
	355	360
Ser Gly Asp Ser Glu Glu Gly Glu Glu Glu Val Gly Glu Gly Thr Pro		365
	370	375
Gln Ser Ser Ala Pro Thr Glu Gly Asp Tyr Val Pro Asp Ser Pro Ala		380
	385	390
Leu Ser Pro Ile Glu Leu Lys Gln Glu Leu Pro Lys Tyr Leu Pro Ala		395
	405	410
Leu Gln Gly Cys Arg Ser Val Glu Glu Phe Gln Cys Leu Asn Arg Ile		415
	420	425
Glu Glu Gly Thr Tyr Gly Val Val Tyr Arg Ala Lys Asp Lys Lys Thr		430
	435	440
Asp Glu Ile Val Ala Leu Lys Arg Leu Lys Met Glu Lys Glu Lys Glu		445
	450	455
Gly Phe Pro Ile Thr Ser Leu Arg Glu Ile Asn Thr Ile Leu Lys Ala		460
	465	470
Gln His Pro Asn Ile Val Thr Val Arg Glu Ile Val Val Gly Ser Asn		475
	485	490
Met Asp Lys Ile Tyr Ile Val Met Asn Tyr Val Glu His Asp Leu Lys		495
	500	505
Ser Leu Met Glu Thr Met Lys Gln Pro Phe Leu Pro Gly Glu Val Lys		510
	515	520
		525

Thr Leu Met Ile Gln Leu Leu Ser Gly Val Lys His Leu His Asp Asn
 530 535 540
 Trp Ile Leu His Arg Asp Leu Lys Thr Ser Asn Leu Leu Leu Ser His
 545 550 555 560
 Ala Gly Ile Leu Lys Val Gly Asp Phe Gly Leu Ala Arg Glu Tyr Gly
 565 570 575
 Ser Pro Leu Lys Ala Tyr Thr Pro Val Val Val Thr Leu Trp Tyr Arg
 580 585 590
 Ala Pro Glu Leu Leu Leu Gly Ala Lys Glu Tyr Ser Thr Ala Val Asp
 595 600 605
 Met Trp Ser Val Gly Cys Ile Phe Gly Glu Leu Leu Thr Gln Lys Pro
 610 615 620
 Leu Phe Pro Gly Lys Ser Asp Ile Asp Gln Ile Asn Lys Ile Phe Lys
 625 630 635 640
 Asp Leu Gly Thr Pro Ser Glu Lys Ile Trp Pro Gly Tyr Asn Asp Leu
 645 650 655
 Pro Ala Val Lys Lys Met Thr Phe Ser Glu Tyr Pro Tyr Asn Asn Leu
 660 665 670
 Arg Lys Arg Phe Gly Ala Leu Leu Ser Asp Gln Gly Phe Asp Leu Met
 675 680 685
 Asn Lys Phe Leu Thr Tyr Tyr Pro Gly Arg Arg Ile Asn Ala Glu Asp
 690 695 700
 Gly Leu Lys His Glu Tyr Phe Arg Glu Thr Pro Leu Pro Ile Asp Pro
 705 710 715 720
 Ser Met Phe Pro Thr Trp Pro Ala Lys Ser Glu Gln Gln Arg Val Lys
 725 730 735
 Arg Gly Thr Ser Pro Arg Pro Pro Glu Gly Gly Leu Gly Tyr Ser Gln
 740 745 750
 Leu Gly Asp Asp Asp Leu Lys Glu Thr Gly Phe His Leu Thr Thr Thr

755 760 765
 Asn Gln Gly Ala Ser Ala Ala Gly Pro Gly Phe Ser Leu Lys Phe
 770 775 780

<210> 46

<211> 1675

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (55).. (909)

<400> 46

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gac gcc atc aag aag aag atg cag atg ctg aag ctc gac aaa gag aac   105
Asp Ala Ile Lys Lys Lys Met Gln Met Leu Lys Leu Asp Lys Glu Asn
           5               10               15
gcc ttg gat cga gct gag caa gcg gag gct gat aag aag gcg gcg gaa   153
Ala Leu Asp Arg Ala Glu Gln Ala Glu Ala Asp Lys Lys Ala Ala Glu
           20               25               30
gac cgg agc aag cag ctg gaa gat gag ctg gtg tca ctg caa aag aaa   201
Asp Arg Ser Lys Gln Leu Glu Asp Glu Leu Val Ser Leu Gln Lys Lys
           35               40               45
ctc aag ggc act gaa gat gaa ctg gac aaa tac tcc gag gct ctc aaa   249
Leu Lys Gly Thr Glu Asp Glu Leu Asp Lys Tyr Ser Glu Ala Leu Lys
           50               55               60               65

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gat gcc cag gag aaa ctg gag ctg gcg gag aaa aag gcc aca gat gct	297
Asp Ala Gln Glu Lys Leu Glu Leu Ala Glu Lys Lys Ala Thr Asp Ala	
70 75 80	
gaa gct gac gta gct tct ctg aac aga cgc atc cag ctg gtt gag gag	345
Glu Ala Asp Val Ala Ser Leu Asn Arg Arg Ile Gln Leu Val Glu Glu	
85 90 95	
gag ttg gat cgt gct cag gag cgt ctg gcc aca gct ctg cag aag ctg	393
Glu Leu Asp Arg Ala Gln Glu Arg Leu Ala Thr Ala Leu Gln Lys Leu	
100 105 110	
gag gag gcc gag aag gct gca gat gag agt gag aga ggc atg aaa gtc	441
Glu Glu Ala Glu Lys Ala Ala Asp Glu Ser Glu Arg Gly Met Lys Val	
115 120 125	
att gaa agc cga gcc caa aaa gat gaa gaa aag atg gag att cag gag	489
Ile Glu Ser Arg Ala Gln Lys Asp Glu Glu Lys Met Glu Ile Gln Glu	
130 135 140 145	
atc cag ctg aaa gag gcc aag cac att gct gaa gat gct gac cgg aag	537
Ile Gln Leu Lys Glu Ala Lys His Ile Ala Glu Asp Ala Asp Arg Lys	
150 155 160	
tat gaa gag gtg gcc cgt aag ctg gtc atc atc gag agc gac ctg gaa	585
Tyr Glu Glu Val Ala Arg Lys Leu Val Ile Ile Glu Ser Asp Leu Glu	
165 170 175	
cgt gca gag gag cgg gct gag ctc tca gaa ggc aaa tgt gcc gag ctt	633
Arg Ala Glu Glu Arg Ala Glu Leu Ser Glu Gly Lys Cys Ala Glu Leu	
180 185 190	
gaa gaa gaa ttg aaa acg gtg acg aac aac ttg aag tca ctg gag gct	681
Glu Glu Glu Leu Lys Thr Val Thr Asn Asn Leu Lys Ser Leu Glu Ala	
195 200 205	
cag gct gag aag tac tct cag aag gaa gac aaa tat gaa gag gag atc	729
Gln Ala Glu Lys Tyr Ser Gln Lys Glu Asp Lys Tyr Glu Glu Glu Ile	

210 215 220 225
 aag gtt ctc tct gac aag ctg aag gag gct gaa act cgg gct gag ttt 777
 Lys Val Leu Ser Asp Lys Leu Lys Glu Ala Glu Thr Arg Ala Glu Phe
 230 235 240
 gca gag aga tca gtg acc aaa ttg gag aaa agc att gat gac tta gaa 825
 Ala Glu Arg Ser Val Thr Lys Leu Glu Lys Ser Ile Asp Asp Leu Glu
 245 250 255
 gag aaa gtg gcc cat gcc aaa gaa gaa aac ctt agt atg cac cag atg 873
 Glu Lys Val Ala His Ala Lys Glu Glu Asn Leu Ser Met His Gln Met
 260 265 270
 ctg gat cag act tta ctg gag cta aac aac atg tga aaccctcctt 919
 Leu Asp Gln Thr Leu Leu Glu Leu Asn Asn Met
 275 280 285
 agctgcggcc agattctctc cccctccccc catgtttaat ttgtcttta aacacatgct 979
 taccgtgaaa ccccttcaat gcgttttttt ttatatatac ttttaccact gtcactgaaa 1039
 catctgccga gagccagcta gggcaggagt tggggaaaga cgcgagaaa ggcaagcccg 1099
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 tgatatgaaa taaaacgcac atttaggaca ttttct 1675

<210> 47

<211> 284

<212> PRT

<213> Mus musculus

<400> 47

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      20             25             30
Glu Asp Arg Ser Lys Gln Leu Glu Asp Glu Leu Val Ser Leu Gln Lys
      35             40             45
Lys Leu Lys Gly Thr Glu Asp Glu Leu Asp Lys Tyr Ser Glu Ala Leu
      50             55             60
Lys Asp Ala Gln Glu Lys Leu Glu Leu Ala Glu Lys Lys Ala Thr Asp
      65             70             75             80
Ala Glu Ala Asp Val Ala Ser Leu Asn Arg Arg Ile Gln Leu Val Glu
      85             90             95
Glu Glu Leu Asp Arg Ala Gln Glu Arg Leu Ala Thr Ala Leu Gln Lys
      100            105            110
Leu Glu Glu Ala Glu Lys Ala Ala Asp Glu Ser Glu Arg Gly Met Lys
      115            120            125
Val Ile Glu Ser Arg Ala Gln Lys Asp Glu Glu Lys Met Glu Ile Gln
      130            135            140
Glu Ile Gln Leu Lys Glu Ala Lys His Ile Ala Glu Asp Ala Asp Arg
      145            150            155            160
Lys Tyr Glu Glu Val Ala Arg Lys Leu Val Ile Ile Glu Ser Asp Leu
      165            170            175
Glu Arg Ala Glu Glu Arg Ala Glu Leu Ser Glu Gly Lys Cys Ala Glu
      180            185            190
Leu Glu Glu Glu Leu Lys Thr Val Thr Asn Asn Leu Lys Ser Leu Glu

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195	200	205
Ala Gln Ala Glu Lys Tyr Ser Gln Lys Glu Asp Lys Tyr Glu Glu Glu		
210	215	220
Ile Lys Val Leu Ser Asp Lys Leu Lys Glu Ala Glu Thr Arg Ala Glu		
225	230	235
Phe Ala Glu Arg Ser Val Thr Lys Leu Glu Lys Ser Ile Asp Asp Leu		
	245	250
		255
Glu Glu Lys Val Ala His Ala Lys Glu Glu Asn Leu Ser Met His Gln		
	260	265
		270
Met Leu Asp Gln Thr Leu Leu Glu Leu Asn Asn Met		
275	280	

<210> 48

<211> 949

<212> DNA

<213> Mus musculus

<400> 48

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gccatcaacg ctctacatgg cagccagacc atgcctggag cctcctccag cctgggtggtc 120
aagtttgcag aactgacaa ggagcgcaca atgcgacgga tgcagcagat ggctggccag 180
atgggcatgt tcaaccccat ggccatcccc ttcgagacct atggcgcccta tgctcaggca 240
ctgatgcagc agcaagcagc cctcatggca tcggtcgcgc aaggaggcta cctgaatccc 300
atggctgcct tcgctgccgc ccaaatgcag cagatggcgg cctcaacat gaatggcctg 360
gcagccgcac ctatgacccc aacctcaggt ggcagcacc cctcaggcat cactgcacca 420
gctgtgccta gcatcccatc ccccatgttg gtgaacggct tcacgggcct cccctcagg 480
ccaatgggca gcgtgctgcg gaacgtgtgt ntgccaatgn gcattaccg tacgcagcac 540
agagccccac ggcagccgac cccgtgcagc aggcctacgc tggagtigca gagtatcgag 600
gacgtgccta gcctgctgcc tatggtcaga ttagccaggc ctttctcag cgacggcgaa 660

tgattcccag canagagaga agggccgtag gigtatttt tgcggcgcgt cgcgggagtt 720
 gtggacgacg tggaagagct gcctgtggtt ggggttgaag atgagacgaa acgatctcga 780
 tagggttaca ttctgaggcg agggcggttg ggtaagagtt ccgaatttgg tgtgctgggc 840
 acgatggaga caggcgagaa taacattcta tatggagggg ttaacaagag aaaggttgtg 900
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<210> 49

<211> 980

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (87).. (659)

<400> 49

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 cgcgggccccg gacgcctcc gaaacc atg aac ttt ctg ctc tct tgg gtg cac 113

Met Asn Phe Leu Leu Ser Trp Val His

1

5

tgg acc ctg gct tta ctg ctg tac ctc cac cat gcc aag tgg tcc cag 161

Trp Thr Leu Ala Leu Leu Leu Tyr Leu His His Ala Lys Trp Ser Gln

10

15

20

25

gct gca ccc acg aca gaa gga gag cag aag tcc cat gaa gtg atc aag 209

Ala Ala Pro Thr Thr Glu Gly Glu Gln Lys Ser His Glu Val Ile Lys

30

35

40

ttc atg gac gtc tac cag cga agc tac tgc cgt cca att gag acc ctg 257

Phe Met Asp Val Tyr Gln Arg Ser Tyr Cys Arg Pro Ile Glu Thr Leu

45

50

55

gtg gac atc ttc cag gag tac ccc gac gag ata gag tac atc ttc aag 305
 Val Asp Ile Phe Gln Glu Tyr Pro Asp Glu Ile Glu Tyr Ile Phe Lys
 60 65 70
 ccg tcc tgt gtg ccg ctg atg cgc tgt gca ggc tgc tgt aac gat gaa 353
 Pro Ser Cys Val Pro Leu Met Arg Cys Ala Gly Cys Cys Asn Asp Glu
 75 80 85
 gcc ctg gag tgc gtg ccc acg tca gag agc aac atc acc atg cag atc 401
 Ala Leu Glu Cys Val Pro Thr Ser Glu Ser Asn Ile Thr Met Gln Ile
 90 95 100 105
 atg cgg atc aaa cct cac caa agc cag cac ata gag aga atg agc ttc 449
 Met Arg Ile Lys Pro His Gln Ser Gln His Ile Glu Arg Met Ser Phe
 110 115 120
 cta cag cac agc aga tgt gaa tgc aga cca aag aaa gac aga aca aag 497
 Leu Gln His Ser Arg Cys Glu Cys Arg Pro Lys Lys Asp Arg Thr Lys
 125 130 135
 cca gaa aat cac tgt gag cct tgt tca gag cgg aga aag cat ttg ttt 545
 Pro Glu Asn His Cys Glu Pro Cys Ser Glu Arg Arg Lys His Leu Phe
 140 145 150
 gtc caa gat ccg cag acg tgt aaa tgt tcc tgc aaa aac aca gac tcg 593
 Val Gln Asp Pro Gln Thr Cys Lys Cys Ser Cys Lys Asn Thr Asp Ser
 155 160 165
 cgt tgc aag gcg agg cag ctt gag tta aac gaa cgt act tgc aga tgt 641
 Arg Cys Lys Ala Arg Gln Leu Glu Leu Asn Glu Arg Thr Cys Arg Cys
 170 175 180 185
 gac aag cca agg cgg tga gccaggctgg caggaaggag cctcctcagg 689
 Asp Lys Pro Arg Arg
 190
 gtcttcgggaa ccagacctct caccggaaag accgattaac catgtcacca ccatgccatc 749
 atcgtcaccg ttgacagaac agtccttaat ccagaaagcc tgatatgaag gaagaggaga 809

tccttcgagg agcactttgg gtccggaggg cgagactccg gcagacgcat tcccgggcag 869
 gtgaccaagc acgtgccctcg tgggactgga ttgccattt tcttatact gctgctaaat 929
 cgccaagccc ggaagattag ggttgttctt gggattcctg tagagctcgt g 980

<210> 50

<211> 190

<212> PRT

<213> Mus musculus

<400> 50

Met Asn Phe Leu Leu Ser Trp Val His Trp Thr Leu Ala Leu Leu Leu
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 Tyr Leu His His Ala Lys Trp Ser Gln Ala Ala Pro Thr Thr Glu Gly
 20 25 30
 Glu Gln Lys Ser His Glu Val Ile Lys Phe Met Asp Val Tyr Gln Arg
 35 40 45
 Ser Tyr Cys Arg Pro Ile Glu Thr Leu Val Asp Ile Phe Gln Glu Tyr
 50 55 60
 Pro Asp Glu Ile Glu Tyr Ile Phe Lys Pro Ser Cys Val Pro Leu Met
 65 70 75 80
 Arg Cys Ala Gly Cys Cys Asn Asp Glu Ala Leu Glu Cys Val Pro Thr
 85 90 95
 Ser Glu Ser Asn Ile Thr Met Gln Ile Met Arg Ile Lys Pro His Gln
 100 105 110
 Ser Gln His Ile Glu Arg Met Ser Phe Leu Gln His Ser Arg Cys Glu
 115 120 125
 Cys Arg Pro Lys Lys Asp Arg Thr Lys Pro Glu Asn His Cys Glu Pro
 130 135 140
 Cys Ser Glu Arg Arg Lys His Leu Phe Val Gln Asp Pro Gln Thr Cys

145 150 155 160
 Lys Cys Ser Cys Lys Asn Thr Asp Ser Arg Cys Lys Ala Arg Gln Leu
 165 170 175
 Glu Leu Asn Glu Arg Thr Cys Arg Cys Asp Lys Pro Arg Arg
 180 185 190

<210> 51

<211> 1469

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (121).. (1089)

<400> 51

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 catcacaccc gggaggagcc gcagccgtcg ccgccggccc cagtcaccat caccgcaacc 120
 atg agc agc gag gcc gag acc cag cag ccg ccc gcc gcc ccc gcc gcc 168
 Met Ser Ser Glu Ala Glu Thr Gln Gln Pro Pro Ala Ala Pro Ala Ala
 1 5 10 15
 gcc ctc agc gcc gcc gac acc aag ccc ggc tcc acg gcg agc ggc gcg 216
 Ala Leu Ser Ala Ala Asp Thr Lys Pro Gly Ser Thr Ala Ser Gly Ala
 20 25 30
 ggt agt ggc ggc ccg ggt ggc ctc aca tcg gcg gcg ccg gcg ggc ggc 264
 Gly Ser Gly Gly Pro Gly Gly Leu Thr Ser Ala Ala Pro Ala Gly Gly
 35 40 45
 gac aag aag gtc atc gca acg aag gtt ttg gga aca gtc aaa tgg ttc 312
 Asp Lys Lys Val Ile Ala Thr Lys Val Leu Gly Thr Val Lys Trp Phe

50	55	60	
aat gta agg aac gga tac ggt ttc atc aac agg aat gac acc aag gaa	360		
Asn Val Arg Asn Gly Tyr Gly Phe Ile Asn Arg Asn Asp Thr Lys Glu			
65	70	75	80
gac gta ttt gta cac cag act gcc ata aag aag aat aac ccc agg aag	408		
Asp Val Phe Val His Gln Thr Ala Ile Lys Lys Asn Asn Pro Arg Lys			
85	90	95	
tac ctt cgc agt gta ggc gat gga gag act gtg gag ttt gat gtt gtt	456		
Tyr Leu Arg Ser Val Gly Asp Gly Glu Thr Val Glu Phe Asp Val Val			
100	105	110	
gaa gga gaa aag ggt gcg gag gca gca aat gtt aca ggc cct ggt gga	504		
Glu Gly Glu Lys Gly Ala Glu Ala Ala Asn Val Thr Gly Pro Gly Gly			
115	120	125	
gtt cca gtt caa ggc agt aaa tac gca gca gac cgt aac cat tat aga	552		
Val Pro Val Gln Gly Ser Lys Tyr Ala Ala Asp Arg Asn His Tyr Arg			
130	135	140	
cgc tat cca cgt cgt agg ggt cct cca cgc aat tac cag caa aat tac	600		
Arg Tyr Pro Arg Arg Arg Gly Pro Pro Arg Asn Tyr Gln Gln Asn Tyr			
145	150	155	160
cag aat agt gag agt ggg gaa aag aac gag gga tcg gaa agc gct cct	648		
Gln Asn Ser Glu Ser Gly Glu Lys Asn Glu Gly Ser Glu Ser Ala Pro			
165	170	175	
gaa ggc cag gcc caa caa cgc cgg ccc tat cgc agg cga agg ttc cca	696		
Glu Gly Gln Ala Gln Gln Arg Arg Pro Tyr Arg Arg Arg Arg Phe Pro			
180	185	190	
cct tac tac atg cga aga ccc tat gcg cgt cga cca cag tat tcc aac	744		
Pro Tyr Tyr Met Arg Arg Pro Tyr Ala Arg Arg Pro Gln Tyr Ser Asn			
195	200	205	
ccc cct gtg caa gga gaa gtg atg gag ggt gct gac aac cag ggt gca	792		

Pro Pro Val Gln Gly Glu Val Met Glu Gly Ala Asp Asn Gln Gly Ala
 210 215 220
 gga gag caa ggt aga cca gtg aga cag aat atg tat cgg ggt tac aga 840
 Gly Glu Gln Gly Arg Pro Val Arg Gln Asn Met Tyr Arg Gly Tyr Arg
 225 230 235 240
 cca cga ttc cga agg ggc cct cct cgc caa aga cag cct aga gag gat 888
 Pro Arg Phe Arg Arg Gly Pro Pro Arg Gln Arg Gln Pro Arg Glu Asp
 245 250 255
 ggc aat gaa gag gac aaa gaa aat caa gga gat gag acc caa ggt cag 936
 Gly Asn Glu Glu Asp Lys Glu Asn Gln Gly Asp Glu Thr Gln Gly Gln
 260 265 270
 cag cca cct caa cgt cgg tat cgc cga aac ttc aat tac cga cgc aga 984
 Gln Pro Pro Gln Arg Arg Tyr Arg Arg Asn Phe Asn Tyr Arg Arg Arg
 275 280 285
 cgc cca gag aac cct aaa cca caa gat ggc aaa gag aca aaa gca gcc 1032
 Arg Pro Glu Asn Pro Lys Pro Gln Asp Gly Lys Glu Thr Lys Ala Ala
 290 295 300
 gat cca cca gct gag aat tcg tcc gct ccc gag gct gag cag ggc ggg 1080
 Asp Pro Pro Ala Glu Asn Ser Ser Ala Pro Glu Ala Glu Gln Gly Gly
 305 310 315 320
 gct gag taa atgccggcctt accatctctta ccatcatccg gtttggtcat 1129
 Ala Glu
 ccaccaagaa gaaatgaata tgaaattcca gcaataagaa atgaacaaaag attggagctg 1189
 aagaccttaa gtgcttgctt ttigcccgct gaccagatac attagaacta tctgcattat 1249
 cattgcacat ggggttttta ttattttttac ctaaagatgt ctcttttttg taatgacaaa 1309
 cgtgtttttt aagaaaaaaa aaaaaaaggc ctggtttttc tcaatacacc ttttaacggtt 1369
 tttaaattgt ticatatctg gtcaagtiga gatttttaag aacttcatit ttaatttgta 1429
 ataaagtitta caacttgatt ttttcaaaaa agtcaacagg 1469

<210> 52

<211> 322

<212> PRT

<213> Mus musculus

<400> 52

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          20             25             30
Gly Ser Gly Gly Pro Gly Gly Leu Thr Ser Ala Ala Pro Ala Gly Gly
          35             40             45
Asp Lys Lys Val Ile Ala Thr Lys Val Leu Gly Thr Val Lys Trp Phe
          50             55             60
Asn Val Arg Asn Gly Tyr Gly Phe Ile Asn Arg Asn Asp Thr Lys Glu
          65             70             75             80
Asp Val Phe Val His Gln Thr Ala Ile Lys Lys Asn Asn Pro Arg Lys
          85             90             95
Tyr Leu Arg Ser Val Gly Asp Gly Glu Thr Val Glu Phe Asp Val Val
          100            105            110
Glu Gly Glu Lys Gly Ala Glu Ala Ala Asn Val Thr Gly Pro Gly Gly
          115            120            125
Val Pro Val Gln Gly Ser Lys Tyr Ala Ala Asp Arg Asn His Tyr Arg
          130            135            140
Arg Tyr Pro Arg Arg Arg Gly Pro Pro Arg Asn Tyr Gln Gln Asn Tyr
          145            150            155            160
Gln Asn Ser Glu Ser Gly Glu Lys Asn Glu Gly Ser Glu Ser Ala Pro
          165            170            175
Glu Gly Gln Ala Gln Gln Arg Arg Pro Tyr Arg Arg Arg Arg Phe Pro

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180 185 190
 Pro Tyr Tyr Met Arg Arg Pro Tyr Ala Arg Arg Pro Gln Tyr Ser Asn
 195 200 205
 Pro Pro Val Gln Gly Glu Val Met Glu Gly Ala Asp Asn Gln Gly Ala
 210 215 220
 Gly Glu Gln Gly Arg Pro Val Arg Gln Asn Met Tyr Arg Gly Tyr Arg
 225 230 235 240
 Pro Arg Phe Arg Arg Gly Pro Pro Arg Gln Arg Gln Pro Arg Glu Asp
 245 250 255
 Gly Asn Glu Glu Asp Lys Glu Asn Gln Gly Asp Glu Thr Gln Gly Gln
 260 265 270
 Gln Pro Pro Gln Arg Arg Tyr Arg Arg Asn Phe Asn Tyr Arg Arg Arg
 275 280 285
 Arg Pro Glu Asn Pro Lys Pro Gln Asp Gly Lys Glu Thr Lys Ala Ala
 290 295 300
 Asp Pro Pro Ala Glu Asn Ser Ser Ala Pro Glu Ala Glu Gln Gly Gly
 305 310 315 320
 Ala Glu

<210> 53

<211> 525

<212> DNA

<213> Mus musculus

<400> 53

ggcacgagtg ataaagaaat tgtggctgag gcagaaagac tggatgtaaa agccatgggt 60
 cctcttgttt tgacagaagt tctctttgat gagaagataa gagagcaaat caagaaatac 120
 aggcgccatt ttctaagatt ttgtcataac aacaaaaagg ctcagcggta ccttcttcat 180
 ggtttggaaat gtgtggtagc aatgcatcaa gtcagctga tctccaagat cccacacatc 240

ctgaaggaga tgtatgatgc cgaccigtta gaggaggagg tcattatcag ctggtcagaa 300
 aaggcctcta agaaataigt cicaaaagaa ctgccaag agattcgtgt caaagcagag 360
 ccatitatta aatggttgaa ggaagcagag gaagaatctt ctggttgga ggaagaagat 420
 gaagacgaaa atattgaggt cgtatattcg aaaactgcc a gtgtaccaa agttgaaact 480
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<210> 54

<211> 975

<212> DNA

<213> Mus musculus

<400> 54

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 tgatgaagtc ccaagttgtt ccatcatact ttttaccctc ctcagaatcg gtcgagggtg 180
 tcggtttgtt cgtaagggtg tggctattaa catggtgacc gaagaagaca agaggactct 240
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 ggctaaggaa gagctggagg ggggagggga gggagccaag ggatggacat cttgtttttg 420
 ttttggcttt tttttttttt gtttcagttt tttttctatg aataaatgtc actttttgag 480
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 agtcacctcg ttccctaaagg ctttcttacc ccagccaaat ctccaaagtg agtcaagggg 660
 ctaaaaaaca aggctggcct cattgctgga ccaaatctac aggagaaacc cctgagtgaa 720
 ggattgtcca gggaattgac ccctggtgag gggagcaagg ggaagaaaaa atggtagcca 780
 tttttacatt gttttgtata gtattttattg attcaggaaa caaacacaac aaaattgtga 840
 ataaaattac ttggaaactg cctgaatttg ggctctgtta cttccattc ctctactgtg 900
 ctgtttgggt tctgtttgtt tttccttaag tctactgtag tgtggatagt gacgatatag 960
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<210> 55

<211> 1282

<212> DNA

<213> *Mus musculus*

<220>

<221> CDS

<222> (76).. (984)

<400> 55

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 gcccggccgc ccgcc atg gag cct ggc ccc gac ggc cca gcc gcg ccc ggc 111

Met Glu Pro Gly Pro Asp Gly Pro Ala Ala Pro Gly

1

5

10

ccc gcc gcc atc cgt gag ggc tgg ttc cga gag acc tgc agc ctg tgg 159
 Pro Ala Ala Ile Arg Glu Gly Trp Phe Arg Glu Thr Cys Ser Leu Trp

15

20

25

ccc ggc cag gcc ctg tcg ctg caa gtg gag cag ctg ctt cac cac cgg 207
 Pro Gly Gln Ala Leu Ser Leu Gln Val Glu Gln Leu Leu His His Arg

30

35

40

cga tcg cgg tac caa gac atc ctc gtc ttc cgc agt aaa acc tac ggc 255
 Arg Ser Arg Tyr Gln Asp Ile Leu Val Phe Arg Ser Lys Thr Tyr Gly

45

50

55

60

aac gtg ctg gtt ctg gat ggc gtc atc cag tgt act gag agg gat gag 303
 Asn Val Leu Val Leu Asp Gly Val Ile Gln Cys Thr Glu Arg Asp Glu

65

70

75

ttc tcc tac cag gag atg atc gcc aac ctg ccg ctc tgc agc cac ccc 351
 Phe Ser Tyr Gln Glu Met Ile Ala Asn Leu Pro Leu Cys Ser His Pro

80	85	90	
aac ccg cgg aag gtg ctg atc atc ggg ggt gga gat ggg ggc gtc cta			399
Asn Pro Arg Lys Val Leu Ile Ile Gly Gly Gly Asp Gly Gly Val Leu			
95	100	105	
cgg gaa gtg gtg aag cac ccc tct gtg gag tcg gtg gtc cag tgc gag			447
Arg Glu Val Val Lys His Pro Ser Val Glu Ser Val Val Gln Cys Glu			
110	115	120	
att gat gag gat gtc att gaa gtc tct aag aag ttc ctg cct ggc atg			495
Ile Asp Glu Asp Val Ile Glu Val Ser Lys Lys Phe Leu Pro Gly Met			
125	130	135	140
gcc gtt ggc ttc tcc agc tca aag ctg act ctc cac gtg ggc gat ggc			543
Ala Val Gly Phe Ser Ser Ser Lys Leu Thr Leu His Val Gly Asp Gly			
145	150	155	
ttt gag ttc atg aaa cag aac caa gat gcc ttt gac gtc atc atc acc			591
Phe Glu Phe Met Lys Gln Asn Gln Asp Ala Phe Asp Val Ile Ile Thr			
160	165	170	
gac tcc tca gac ccc atg ggc cct gct gag agc ctc ttc aag gag tcc			639
Asp Ser Ser Asp Pro Met Gly Pro Ala Glu Ser Leu Phe Lys Glu Ser			
175	180	185	
tat tac cag ctc atg aag aca gca ctc aaa gaa gat ggc atc ctg tgc			687
Tyr Tyr Gln Leu Met Lys Thr Ala Leu Lys Glu Asp Gly Ile Leu Cys			
190	195	200	
tgc cag ggt gag tgc cag tgg ctg cac ctg gac ctc atc aag gag atg			735
Cys Gln Gly Glu Cys Gln Trp Leu His Leu Asp Leu Ile Lys Glu Met			
205	210	215	220
agg cac ttc tgc aaa tct ctc ttc ccc gtg gtg gac tac gcc tac tgt			783
Arg His Phe Cys Lys Ser Leu Phe Pro Val Val Asp Tyr Ala Tyr Cys			
225	230	235	
agc att cct acc tat ccc agc ggc cag atc ggc ttc atg ctg tgt agc			831

Ser Ile Pro Thr Tyr Pro Ser Gly Gln Ile Gly Phe Met Leu Cys Ser
 240 245 250
 aaa aac ccg agc acc aac ttc cgg gag cca gtg cag cag ttg aca cag 879
 Lys Asn Pro Ser Thr Asn Phe Arg Glu Pro Val Gln Gln Leu Thr Gln
 255 260 265
 gcc cag gtg gag cag atg cag ctg aaa tac tat aac tcg gac atg cac 927
 Ala Gln Val Glu Gln Met Gln Leu Lys Tyr Tyr Asn Ser Asp Met His
 270 275 280
 cgt gcc gcc ttc gta ctg cct gag ttc acc cgg aag gcc ctc aat gac 975
 Arg Ala Ala Phe Val Leu Pro Glu Phe Thr Arg Lys Ala Leu Asn Asp
 285 290 295 300
 ata agc tga atccaggtgc cactgtgaca ccacccgaga cctcaatcgg 1024
 Ile Ser
 attggaccaa ggatcttcca agttgtctgg ggaccaccag tccctggacca gactcccaga 1084
 tgactcttgc ccaccaacca agtggttacag gcccctgat gctgcctggc ctggcctggc 1144
 ctggcctggc ctggcctgcc ctgctgggtg gactcagict ctgtctgtct atctctgtgg 1204
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 aaatacatgt gtattccg 1282

<210> 56

<211> 302

<212> PRT

<213> Mus musculus

<400> 56

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 20 25 30

Leu Ser Leu Gln Val Glu Gln Leu Leu His His Arg Arg Ser Arg Tyr
 35 40 45
 Gln Asp Ile Leu Val Phe Arg Ser Lys Thr Tyr Gly Asn Val Leu Val
 50 55 60
 Leu Asp Gly Val Ile Gln Cys Thr Glu Arg Asp Glu Phe Ser Tyr Gln
 65 70 75 80
 Glu Met Ile Ala Asn Leu Pro Leu Cys Ser His Pro Asn Pro Arg Lys
 85 90 95
 Val Leu Ile Ile Gly Gly Gly Asp Gly Gly Val Leu Arg Glu Val Val
 100 105 110
 Lys His Pro Ser Val Glu Ser Val Val Gln Cys Glu Ile Asp Glu Asp
 115 120 125
 Val Ile Glu Val Ser Lys Lys Phe Leu Pro Gly Met Ala Val Gly Phe
 130 135 140
 Ser Ser Ser Lys Leu Thr Leu His Val Gly Asp Gly Phe Glu Phe Met
 145 150 155 160
 Lys Gln Asn Gln Asp Ala Phe Asp Val Ile Ile Thr Asp Ser Ser Asp
 165 170 175
 Pro Met Gly Pro Ala Glu Ser Leu Phe Lys Glu Ser Tyr Tyr Gln Leu
 180 185 190
 Met Lys Thr Ala Leu Lys Glu Asp Gly Ile Leu Cys Cys Gln Gly Glu
 195 200 205
 Cys Gln Trp Leu His Leu Asp Leu Ile Lys Glu Met Arg His Phe Cys
 210 215 220
 Lys Ser Leu Phe Pro Val Val Asp Tyr Ala Tyr Cys Ser Ile Pro Thr
 225 230 235 240
 Tyr Pro Ser Gly Gln Ile Gly Phe Met Leu Cys Ser Lys Asn Pro Ser
 245 250 255
 Thr Asn Phe Arg Glu Pro Val Gln Gln Leu Thr Gln Ala Gln Val Glu

	260		265		270										
Gln	Met	Gln	Leu	Lys	Tyr	Tyr	Asn	Ser	Asp	Met	His	Arg	Ala	Ala	Phe
	275		280		285										
Val	Leu	Pro	Glu	Phe	Thr	Arg	Lys	Ala	Leu	Asn	Asp	Ile	Ser		
	290		295		300										

<210> 57

<211> 3566

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (55).. (3045)

<400> 57

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Phe Pro Cys Ala Arg Gly Arg Glu Ser Ser Glu Pro Gly Arg Met Arg
                    5                10                15
cgc ccg ccg cgg ccc ggg ggc tcc ggg ggc tcc ggg ggc tcc ggg ggc      153
Arg Pro Arg Arg Pro Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
                    20                25                30
ctc cgg ctg ctg gtc tgc ctg ctg ttg ctg agc ggc cgc ccc ggg ggc      201
Leu Arg Leu Leu Val Cys Leu Leu Leu Leu Ser Gly Arg Pro Gly Gly
                    35                40                45
tgc agc gcc atc agt gcc cac ggc tgt ctg ttt gac cgc aga ctt tgt      249

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Cys Ser Ala Ile Ser Ala His Gly Cys Leu Phe Asp Arg Arg Leu Cys
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 Ser His Leu Glu Val Cys Ile Gln Asp Gly Leu Phe Gly Gln Cys Gln
 70 75 80
 gca gga gtg ggg cag gca cgg ccc ctc tta caa gtc act tcc cca gtt 345
 Ala Gly Val Gly Gln Ala Arg Pro Leu Leu Gln Val Thr Ser Pro Val
 85 90 95
 ctc cag cgc cta caa ggt gtg ctc cgg caa ctc atg tcc caa ggc ttg 393
 Leu Gln Arg Leu Gln Gly Val Leu Arg Gln Leu Met Ser Gln Gly Leu
 100 105 110
 tcc tgg cat gat gac ctt acc cag cat gtg atc tcc cag gag atg gaa 441
 Ser Trp His Asp Asp Leu Thr Gln His Val Ile Ser Gln Glu Met Glu
 115 120 125
 cgc atc ccc agg ctt cgc ccc cca gag ccc cat cca agg gac agg tct 489
 Arg Ile Pro Arg Leu Arg Pro Pro Glu Pro His Pro Arg Asp Arg Ser
 130 135 140 145
 ggt ttg gtg ccc agg aaa cca ggc cct gca ggg gaa ttg cta act cag 537
 Gly Leu Val Pro Arg Lys Pro Gly Pro Ala Gly Glu Leu Leu Thr Gln
 150 155 160
 ggc aat cct act ggc tcc tct cct gct gcc cag ggc ttt cca agg cct 585
 Gly Asn Pro Thr Gly Ser Ser Pro Ala Ala Gln Gly Phe Pro Arg Pro
 165 170 175
 gca ggg ggt ggg gac gga gct ggg gcg ggc tcc cca ctg tcc tct ctg 633
 Ala Gly Gly Gly Asp Gly Ala Gly Ala Gly Ser Pro Leu Ser Ser Leu
 180 185 190
 cag gct gag ttg tta ccc cct ctc ttg gag cat ctg cta atg ccc cca 681
 Gln Ala Glu Leu Leu Pro Pro Leu Leu Glu His Leu Leu Met Pro Pro
 195 200 205

cag cct cca cac cct gct ctg acc tat gaa cct gca ctg cta cag cct 729
 Gln Pro Pro His Pro Ala Leu Thr Tyr Glu Pro Ala Leu Leu Gln Pro
 210 215 220 225
 tac ctc ttc cac cag ttt ggc tcc cga gat ggc tcc cgg ggc tca gag 777
 Tyr Leu Phe His Gln Phe Gly Ser Arg Asp Gly Ser Arg Gly Ser Glu
 230 235 240
 agc tcc tct ggg gta gtt ggt gtt ggt cac ctg tcc aag gct gaa ggt 825
 Ser Ser Ser Gly Val Val Gly Val Gly His Leu Ser Lys Ala Glu Gly
 245 250 255
 cct gca ctc ttc agc aga agt gcc tcc aag gcc att ttg ggg act cac 873
 Pro Ala Leu Phe Ser Arg Ser Ala Ser Lys Ala Ile Leu Gly Thr His
 260 265 270
 tct gga cac tct ttt ggg gac ctt aca ggt ccc tca cct gct caa ctt 921
 Ser Gly His Ser Phe Gly Asp Leu Thr Gly Pro Ser Pro Ala Gln Leu
 275 280 285
 ttc caa gat tca ggg ctg ctc tac atg gcc caa gag ttg cca gtg cct 969
 Phe Gln Asp Ser Gly Leu Leu Tyr Met Ala Gln Glu Leu Pro Val Pro
 290 295 300 305
 ggc aga gcc cgg gca cca agg ttg cca gag aat ggg ggc aac agg gca 1017
 Gly Arg Ala Arg Ala Pro Arg Leu Pro Glu Asn Gly Gly Asn Arg Ala
 310 315 320
 gag gac tct tca gag ggc cat gag gag gaa gta cta ggg ggt cgt ggg 1065
 Glu Asp Ser Ser Glu Gly His Glu Glu Glu Val Leu Gly Gly Arg Gly
 325 330 335
 gag aag tcc cct ccc caa gca gca caa cca gaa ttg agt ctg cag aga 1113
 Glu Lys Ser Pro Pro Gln Ala Ala Gln Pro Glu Leu Ser Leu Gln Arg
 340 345 350
 ttg act gct gta ctg gca ggc tat gga gta gag ctg cgt cag ttg acc 1161
 Leu Thr Ala Val Leu Ala Gly Tyr Gly Val Glu Leu Arg Gln Leu Thr

355	360	365	
ccg gag cag ttt tct acc ctc ttg acc ctg ctg cag ttg ctg ccc aag	1209		
Pro Glu Gln Phe Ser Thr Leu Leu Thr Leu Leu Gln Leu Leu Pro Lys			
370	375	380	385
ggc aca gga aga aat ctt gaa ggg gct gta aat gtt gga gga gcc gat	1257		
Gly Thr Gly Arg Asn Leu Glu Gly Ala Val Asn Val Gly Gly Ala Asp			
390	395	400	
gtc aag aaa aca ata caa cag atg cag aga gga gac cca gca gaa gct	1305		
Val Lys Lys Thr Ile Gln Gln Met Gln Arg Gly Asp Pro Ala Glu Ala			
405	410	415	
ctg ccc ccc aca ccc tcg ctt cct ggg tac ctc act gcc agc cct gcc	1353		
Leu Pro Pro Thr Pro Ser Leu Pro Gly Tyr Leu Thr Ala Ser Pro Ala			
420	425	430	
tcc agc gaa gtt cag cag gtg ctg agc cct ggt ttc cct gaa cct ccc	1401		
Ser Ser Glu Val Gln Gln Val Leu Ser Pro Gly Phe Pro Glu Pro Pro			
435	440	445	
cac aca ccc agc cct ctg ggc tcc tcc tca gtc ctt ctg gag aag aaa	1449		
His Thr Pro Ser Pro Leu Gly Ser Ser Ser Val Leu Leu Glu Lys Lys			
450	455	460	465
agt ccc ttg ggc cag agc cag ccc aca gtg gtg gga cgg cca tca gct	1497		
Ser Pro Leu Gly Gln Ser Gln Pro Thr Val Val Gly Arg Pro Ser Ala			
470	475	480	
cga cca tcg gcc gag gag tat ggc tat atc gtc act gac cag aaa ccc	1545		
Arg Pro Ser Ala Glu Glu Tyr Gly Tyr Ile Val Thr Asp Gln Lys Pro			
485	490	495	
ctg agc ctg gtg gct gga gtg agg ctg ctg gag att ctg gct gag cac	1593		
Leu Ser Leu Val Ala Gly Val Arg Leu Leu Glu Ile Leu Ala Glu His			
500	505	510	
gtg cat atg tcc tcc ggt agc ttt atc aac atc agt gtg gtg gga cca	1641		

Val His Met Ser Ser Gly Ser Phe Ile Asn Ile Ser Val Val Gly Pro
 515 520 525
 gct gtc acc ttc cga atc cgg cac aat gag cag aac ctg tct ttg gca 1689
 Ala Val Thr Phe Arg Ile Arg His Asn Glu Gln Asn Leu Ser Leu Ala
 530 535 540 545
 gat gtg acc cag caa gct ggg ctg gtg aag tct gaa ctg gaa gcg cag 1737
 Asp Val Thr Gln Gln Ala Gly Leu Val Lys Ser Glu Leu Glu Ala Gln
 550 555 560
 aca ggg ctc cag att ttg cag aca ggg gtg gga cag agg gag gaa gca 1785
 Thr Gly Leu Gln Ile Leu Gln Thr Gly Val Gly Gln Arg Glu Glu Ala
 565 570 575
 gct gaa gtc ctt ccc cga caa gcc cat ggc ata tct ccc atg cgc tca 1833
 Ala Glu Val Leu Pro Arg Gln Ala His Gly Ile Ser Pro Met Arg Ser
 580 585 590
 gtg ctg ctt act cta gtg gcc ctg gca ggc gtc gct ggg ctg cta gtg 1881
 Val Leu Leu Thr Leu Val Ala Leu Ala Gly Val Ala Gly Leu Leu Val
 595 600 605
 gct ttg gca gtg gcc ttg tgt atg cgc cat cat tcg aga cag cgg gat 1929
 Ala Leu Ala Val Ala Leu Cys Met Arg His His Ser Arg Gln Arg Asp
 610 615 620 625
 aag gag cgc ctg gca gcc gtg ggg ccg gag ggg gcc cat ggt gac act 1977
 Lys Glu Arg Leu Ala Ala Val Gly Pro Glu Gly Ala His Gly Asp Thr
 630 635 640
 act ttt gag tac cag gac ctg tgt cgc cag cac atg gcc aca aag tcc 2025
 Thr Phe Glu Tyr Gln Asp Leu Cys Arg Gln His Met Ala Thr Lys Ser
 645 650 655
 ctg ttt aac cgg gcg gag ggt cag cca gag cct tct agg gtg agc agt 2073
 Leu Phe Asn Arg Ala Glu Gly Gln Pro Glu Pro Ser Arg Val Ser Ser
 660 665 670

gtg tcc tcc cag ttc agc gac gcg gcc cag gcc agc ccc agt tcc cac	2121
Val Ser Ser Gln Phe Ser Asp Ala Ala Gln Ala Ser Pro Ser Ser His	
675 680 685	
agc agc aca cca tct tgg tgc gag gag ccc gcc cag gcc aac atg gac	2169
Ser Ser Thr Pro Ser Trp Cys Glu Glu Pro Ala Gln Ala Asn Met Asp	
690 695 700 705	
atc tcc aca gga cac atg att ctg gca tac atg gag gat cac ctt cgg	2217
Ile Ser Thr Gly His Met Ile Leu Ala Tyr Met Glu Asp His Leu Arg	
710 715 720	
aac cgg gac cgg ttg gcc aag gag tgg cag gct ctg tgc gcc tac caa	2265
Asn Arg Asp Arg Leu Ala Lys Glu Trp Gln Ala Leu Cys Ala Tyr Gln	
725 730 735	
gca gag cca aac acc tgt gcc gcc gca cag gat gag agc aac atc aag	2313
Ala Glu Pro Asn Thr Cys Ala Ala Ala Gln Asp Glu Ser Asn Ile Lys	
740 745 750	
aag aac cgc cat cct gac ttc cta ccc tat gac cat gcc cga atc aag	2361
Lys Asn Arg His Pro Asp Phe Leu Pro Tyr Asp His Ala Arg Ile Lys	
755 760 765	
ctg aaa gtg gag agc agc cct tct cgg agt gat tac atc aac gcc agc	2409
Leu Lys Val Glu Ser Ser Pro Ser Arg Ser Asp Tyr Ile Asn Ala Ser	
770 775 780 785	
ccc atc atc gag cat gac cct cgg atg ccg gcc tac ata gcc aca cag	2457
Pro Ile Ile Glu His Asp Pro Arg Met Pro Ala Tyr Ile Ala Thr Gln	
790 795 800	
gga cca ctg tcc cac acc atc gcg gac ttc tgg cag atg gtg tgg gag	2505
Gly Pro Leu Ser His Thr Ile Ala Asp Phe Trp Gln Met Val Trp Glu	
805 810 815	
agt ggc tgc act gtc atc gtt atg ctg acc ccg ttg gtg gag gac ggt	2553
Ser Gly Cys Thr Val Ile Val Met Leu Thr Pro Leu Val Glu Asp Gly	

820	825	830	
gtc aaa cag tgt gac cgc tac tgg ccg gat gaa gga tct tcc ctc tac			2601
Val Lys Gln Cys Asp Arg Tyr Trp Pro Asp Glu Gly Ser Ser Leu Tyr			
835	840	845	
cac gtc tat gag gtg aac ctg gtg tgc gag cac atc tgg tgc gag gac			2649
His Val Tyr Glu Val Asn Leu Val Ser Glu His Ile Trp Cys Glu Asp			
850	855	860	865
ttc ctg gtg cgg agc ttc tac ctt aag aac gtg cag acc cag gag acg			2697
Phe Leu Val Arg Ser Phe Tyr Leu Lys Asn Val Gln Thr Gln Glu Thr			
870	875	880	
cgc acg ctc act cag ttc cac ttc ctc agc tgg ccg gca gag ggc act			2745
Arg Thr Leu Thr Gln Phe His Phe Leu Ser Trp Pro Ala Glu Gly Thr			
885	890	895	
ccg gcc tcc acc cgg ccg ctg ctg gac ttc cgc agg aaa gtg aac aag			2793
Pro Ala Ser Thr Arg Pro Leu Leu Asp Phe Arg Arg Lys Val Asn Lys			
900	905	910	
tgc tac aga ggc cgc tcc tgc ccc atc ata gtg cac tgc agt gac ggt			2841
Cys Tyr Arg Gly Arg Ser Cys Pro Ile Ile Val His Cys Ser Asp Gly			
915	920	925	
gca ggg agg aca ggc acc tac atc ctt att gac atg gtc ctg aat cgc			2889
Ala Gly Arg Thr Gly Thr Tyr Ile Leu Ile Asp Met Val Leu Asn Arg			
930	935	940	945
atg gcc aaa gga gtg aag gag att gat att gct gcc acc ctg gag cat			2937
Met Ala Lys Gly Val Lys Glu Ile Asp Ile Ala Ala Thr Leu Glu His			
950	955	960	
gtc cgt gac cag cgg cct gga ctt gtc cgt tct aag gac cag ttt gag			2985
Val Arg Asp Gln Arg Pro Gly Leu Val Arg Ser Lys Asp Gln Phe Glu			
965	970	975	
ttt gcg ctg aca gcc gtg gca gag gag gtg aat gct atc ctc aag gcc			3033

Phe Ala Leu Thr Ala Val Ala Glu Glu Val Asn Ala Ile Leu Lys Ala
 980 985 990
 ctg ccc cag tga gccccctgg gcgccicagt gggcatcctg gcctcggctc 3085
 Leu Pro Gln
 995
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 a 3566

<210> 58

<211> 996

<212> PRT

<213> Mus musculus

<400> 58

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 Gly Leu Arg Leu Leu Val Cys Leu Leu Leu Leu Ser Gly Arg Pro Gly
 35 40 45
 Gly Cys Ser Ala Ile Ser Ala His Gly Cys Leu Phe Asp Arg Arg Leu
 50 55 60

Cys Ser His Leu Glu Val Cys Ile Gln Asp Gly Leu Phe Gly Gln Cys
 65 70 75 80
 Gln Ala Gly Val Gly Gln Ala Arg Pro Leu Leu Gln Val Thr Ser Pro
 85 90 95
 Val Leu Gln Arg Leu Gln Gly Val Leu Arg Gln Leu Met Ser Gln Gly
 100 105 110
 Leu Ser Trp His Asp Asp Leu Thr Gln His Val Ile Ser Gln Glu Met
 115 120 125
 Glu Arg Ile Pro Arg Leu Arg Pro Pro Glu Pro His Pro Arg Asp Arg
 130 135 140
 Ser Gly Leu Val Pro Arg Lys Pro Gly Pro Ala Gly Glu Leu Leu Thr
 145 150 155 160
 Gln Gly Asn Pro Thr Gly Ser Ser Pro Ala Ala Gln Gly Phe Pro Arg
 165 170 175
 Pro Ala Gly Gly Gly Asp Gly Ala Gly Ala Gly Ser Pro Leu Ser Ser
 180 185 190
 Leu Gln Ala Glu Leu Leu Pro Pro Leu Leu Glu His Leu Leu Met Pro
 195 200 205
 Pro Gln Pro Pro His Pro Ala Leu Thr Tyr Glu Pro Ala Leu Leu Gln
 210 215 220
 Pro Tyr Leu Phe His Gln Phe Gly Ser Arg Asp Gly Ser Arg Gly Ser
 225 230 235 240
 Glu Ser Ser Ser Gly Val Val Gly Val Gly His Leu Ser Lys Ala Glu
 245 250 255
 Gly Pro Ala Leu Phe Ser Arg Ser Ala Ser Lys Ala Ile Leu Gly Thr
 260 265 270
 His Ser Gly His Ser Phe Gly Asp Leu Thr Gly Pro Ser Pro Ala Gln
 275 280 285
 Leu Phe Gln Asp Ser Gly Leu Leu Tyr Met Ala Gln Glu Leu Pro Val

290	295	300	
Pro Gly Arg Ala Arg Ala	Pro Arg Leu Pro Glu Asn Gly Gly Asn Arg		
305	310	315	320
Ala Glu Asp Ser Ser Glu Gly His Glu Glu Glu Val Leu Gly Gly Arg			
325	330	335	
Gly Glu Lys Ser Pro Pro Gln Ala Ala Gln Pro Glu Leu Ser Leu Gln			
340	345	350	
Arg Leu Thr Ala Val Leu Ala Gly Tyr Gly Val Glu Leu Arg Gln Leu			
355	360	365	
Thr Pro Glu Gln Phe Ser Thr Leu Leu Thr Leu Leu Gln Leu Leu Pro			
370	375	380	
Lys Gly Thr Gly Arg Asn Leu Glu Gly Ala Val Asn Val Gly Gly Ala			
385	390	395	400
Asp Val Lys Lys Thr Ile Gln Gln Met Gln Arg Gly Asp Pro Ala Glu			
405	410	415	
Ala Leu Pro Pro Thr Pro Ser Leu Pro Gly Tyr Leu Thr Ala Ser Pro			
420	425	430	
Ala Ser Ser Glu Val Gln Gln Val Leu Ser Pro Gly Phe Pro Glu Pro			
435	440	445	
Pro His Thr Pro Ser Pro Leu Gly Ser Ser Ser Val Leu Leu Glu Lys			
450	455	460	
Lys Ser Pro Leu Gly Gln Ser Gln Pro Thr Val Val Gly Arg Pro Ser			
465	470	475	480
Ala Arg Pro Ser Ala Glu Glu Tyr Gly Tyr Ile Val Thr Asp Gln Lys			
485	490	495	
Pro Leu Ser Leu Val Ala Gly Val Arg Leu Leu Glu Ile Leu Ala Glu			
500	505	510	
His Val His Met Ser Ser Gly Ser Phe Ile Asn Ile Ser Val Val Gly			
515	520	525	

Pro Ala Val Thr Phe Arg Ile Arg His Asn Glu Gln Asn Leu Ser Leu
 530 535 540
 Ala Asp Val Thr Gln Gln Ala Gly Leu Val Lys Ser Glu Leu Glu Ala
 545 550 555 560
 Gln Thr Gly Leu Gln Ile Leu Gln Thr Gly Val Gly Gln Arg Glu Glu
 565 570 575
 Ala Ala Glu Val Leu Pro Arg Gln Ala His Gly Ile Ser Pro Met Arg
 580 585 590
 Ser Val Leu Leu Thr Leu Val Ala Leu Ala Gly Val Ala Gly Leu Leu
 595 600 605
 Val Ala Leu Ala Val Ala Leu Cys Met Arg His His Ser Arg Gln Arg
 610 615 620
 Asp Lys Glu Arg Leu Ala Ala Val Gly Pro Glu Gly Ala His Gly Asp
 625 630 635 640
 Thr Thr Phe Glu Tyr Gln Asp Leu Cys Arg Gln His Met Ala Thr Lys
 645 650 655
 Ser Leu Phe Asn Arg Ala Glu Gly Gln Pro Glu Pro Ser Arg Val Ser
 660 665 670
 Ser Val Ser Ser Gln Phe Ser Asp Ala Ala Gln Ala Ser Pro Ser Ser
 675 680 685
 His Ser Ser Thr Pro Ser Trp Cys Glu Glu Pro Ala Gln Ala Asn Met
 690 695 700
 Asp Ile Ser Thr Gly His Met Ile Leu Ala Tyr Met Glu Asp His Leu
 705 710 715 720
 Arg Asn Arg Asp Arg Leu Ala Lys Glu Trp Gln Ala Leu Cys Ala Tyr
 725 730 735
 Gln Ala Glu Pro Asn Thr Cys Ala Ala Ala Gln Asp Glu Ser Asn Ile
 740 745 750
 Lys Lys Asn Arg His Pro Asp Phe Leu Pro Tyr Asp His Ala Arg Ile

755	760	765
Lys Leu Lys Val Glu Ser Ser Pro Ser Arg Ser Asp Tyr Ile Asn Ala		
770	775	780
Ser Pro Ile Ile Glu His Asp Pro Arg Met Pro Ala Tyr Ile Ala Thr		
785	790	795
Gln Gly Pro Leu Ser His Thr Ile Ala Asp Phe Trp Gln Met Val Trp		
805	810	815
Glu Ser Gly Cys Thr Val Ile Val Met Leu Thr Pro Leu Val Glu Asp		
820	825	830
Gly Val Lys Gln Cys Asp Arg Tyr Trp Pro Asp Glu Gly Ser Ser Leu		
835	840	845
Tyr His Val Tyr Glu Val Asn Leu Val Ser Glu His Ile Trp Cys Glu		
850	855	860
Asp Phe Leu Val Arg Ser Phe Tyr Leu Lys Asn Val Gln Thr Gln Glu		
865	870	875
Thr Arg Thr Leu Thr Gln Phe His Phe Leu Ser Trp Pro Ala Glu Gly		
885	890	895
Thr Pro Ala Ser Thr Arg Pro Leu Leu Asp Phe Arg Arg Lys Val Asn		
900	905	910
Lys Cys Tyr Arg Gly Arg Ser Cys Pro Ile Ile Val His Cys Ser Asp		
915	920	925
Gly Ala Gly Arg Thr Gly Thr Tyr Ile Leu Ile Asp Met Val Leu Asn		
930	935	940
Arg Met Ala Lys Gly Val Lys Glu Ile Asp Ile Ala Ala Thr Leu Glu		
945	950	955
His Val Arg Asp Gln Arg Pro Gly Leu Val Arg Ser Lys Asp Gln Phe		
965	970	975
Glu Phe Ala Leu Thr Ala Val Ala Glu Glu Val Asn Ala Ile Leu Lys		
980	985	990

Ala Leu Pro Gln

995

<210> 59

<211> 561

<212> DNA

<213> Mus musculus

<400> 59

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agccacggct gtggccccac tgcaaacggg gaaatgggct catcaaggig aacggacgtc 180
ccctggagat gatcgagccg cgcacgctgc agtacaagtt actggagcct gttttgttc 240
tgggcaagga gcgatttgct ggtgtggata ttcgggtccg tgtgaagggt ggtggacatg 300
tggcccaaatt ttatgccatc cgacagtgca tctcaaaggc cctggtagct tattaccaa 360
aatatgtgga tgaagcctcc aagaaggaga tcaaagatat cctcatcaa tacgatcgga 420
ccctgcttgt agctgacccc cgtcgtcgcg aatccaaaaa gtttggagggt cctggtgccc 480
gtgcccgata ccagaaatcc taccgataag gcaatctcaa ggatcggggt ttacctttgt 540
aaaaacatcc taggatttta a 561
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<210> 60

<211> 2947

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (531).. (1874)

<400> 60

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 ctggcgltca cattcctcta tgccacaaat ccgggaagaa gttttattgg gggggctgag 180
 atgttctatg cctttccccc ggcaagcctt gattcgaggc cctctcggca gagactgagc 240
 ggcgagaaaag tgagagcccc gcccgcgcggt ttcgagcgct ggcgctggag ccgcccttct 300
 accggccggc agtcactctct ctigcctgcc ttggcgcggt cgggtgccgg tagcgccctgg 360
 ccgttgccctg ctggctgaga ctctgttagg tgggtcgact cccctccct cctcctcttc 420
 ttctcctct tctcggcct ccggttctc ctcttctcc tgatcttccc tcttggcgg 480
 gcgagggtgg gggggcggtt ggagggcggt gcttgcctcg tgcagccacg atg ctc 536

Met Leu

1

ctg gac gcc gga ccc cag tat ccc gcg att ggt gtg acc acc ttt ggt 584
 Leu Asp Ala Gly Pro Gln Tyr Pro Ala Ile Gly Val Thr Thr Phe Gly

5

10

15

gca tcc cgg cac cac tcg gcg ggc gac gtg gcc gag aga gac gtg ggc 632
 Ala Ser Arg His His Ser Ala Gly Asp Val Ala Glu Arg Asp Val Gly

20

25

30

ctg ggt atc aac cgg ttc gcc gac ggc atg ggc gcc ttc aag ctc aac 680
 Leu Gly Ile Asn Pro Phe Ala Asp Gly Met Gly Ala Phe Lys Leu Asn

35

40

45

50

ccc agt tcg cac gaa ctg gcc tcg gct ggc cag aca gcc ttc acg tcg 728
 Pro Ser Ser His Glu Leu Ala Ser Ala Gly Gln Thr Ala Phe Thr Ser

55

60

65

cag gct ccg ggc tac cgc gct gct gcg gcc ctg ggc cac cat cac cac 776
 Gln Ala Pro Gly Tyr Arg Ala Ala Ala Ala Leu Gly His His His His

70

75

80

ccc ggc cac gtc ggc tcc tac tcc agc gct gct ttc aat tct acc cgg 824
 Pro Gly His Val Gly Ser Tyr Ser Ser Ala Ala Phe Asn Ser Thr Arg

85	90	95	
gac ttt ctg ttc cgc aac cgt ggc ttc ggc gac gcg gcg gcg gca gct			872
Asp Phe Leu Phe Arg Asn Arg Gly Phe Gly Asp Ala Ala Ala Ala Ala			
100	105	110	
agc gcc cag cac agt ctc ttc gct gct tcg gcc ggc ggc ttt ggg ggc			920
Ser Ala Gln His Ser Leu Phe Ala Ala Ser Ala Gly Gly Phe Gly Gly			
115	120	125	130
cca cac ggc cat acg gac gcc gcg ggc cac ctc ctt ttt tct ggg ctt			968
Pro His Gly His Thr Asp Ala Ala Gly His Leu Leu Phe Ser Gly Leu			
	135	140	145
cac gag cag gcg gct ggc cac gct tcg ccc aac gtg gtt aac ggg cag			1016
His Glu Gln Ala Ala Gly His Ala Ser Pro Asn Val Val Asn Gly Gln			
150	155	160	
atg cgg cta ggt ttc tcc ggg gac atg tac cca cgg ccg gaa cag tac			1064
Met Arg Leu Gly Phe Ser Gly Asp Met Tyr Pro Arg Pro Glu Gln Tyr			
165	170	175	
ggc cag gtg acc agc ccg cga tcc gag cac tat gct gcc ccg cag ctt			1112
Gly Gln Val Thr Ser Pro Arg Ser Glu His Tyr Ala Ala Pro Gln Leu			
180	185	190	
cac ggc tat ggg ccc atg aac gtg aac atg gct gca cat cac ggg gct			1160
His Gly Tyr Gly Pro Met Asn Val Asn Met Ala Ala His His Gly Ala			
195	200	205	210
gga gcc ttc ttc cgc tat atg cgc caa ccc atc aag caa gag ctt atc			1208
Gly Ala Phe Phe Arg Tyr Met Arg Gln Pro Ile Lys Gln Glu Leu Ile			
	215	220	225
tgt aaa tgg atc gag ccg gag cag ctg gcc aac ccc aaa aag tcg tgc			1256
Cys Lys Trp Ile Glu Pro Glu Gln Leu Ala Asn Pro Lys Lys Ser Cys			
230	235	240	
aac aaa act ttc agc acc atg cac gag ctg gtc acg cac gtc acg gtg			1304

tgc tcc acg cca ccc acc atc gtg tct ccc aca aca gac aac ccg acc 1784
 Ser Ser Thr Pro Pro Thr Ile Val Ser Pro Thr Thr Asp Asn Pro Thr
 405 410 415
 acc agc tcc atg tgc ccc tcc tcc tcc gcg gtt cac cac aca gcc ggc 1832
 Thr Ser Ser Met Ser Pro Ser Ser Ser Ala Val His His Thr Ala Gly
 420 425 430
 cac agc gcg ctc tct tcc aat ttt aac gaa tgg tac gtt taa 1874
 His Ser Ala Leu Ser Ser Asn Phe Asn Glu Trp Tyr Val
 435 440 445
 aatcagaaac aaaacatgcc gacccccctat ttaagagact gaacacacac gtatatacgc 1934
 cgtattattg aaagaatcct gaaactcgag acacccctcg tcccgaattcc cgcaaacggt 1994
 tttattttta tttttgttgt tgttgttgtt tgtttgatit tgtttttaaa tctgccggta 2054
 aatccaggac tgagtaaaac agaggaggca gcaagccttt aggttttttc actccaaatt 2114
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 acctaacaga atattattga tattaatgtg cttttttttg tataaagtgc aaacatttcg 2594
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<211> 447

<212> PRT

<213> Mus musculus

<400> 61

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      20             25             30
Val Gly Leu Gly Ile Asn Pro Phe Ala Asp Gly Met Gly Ala Phe Lys
      35             40             45
Leu Asn Pro Ser Ser His Glu Leu Ala Ser Ala Gly Gln Thr Ala Phe
      50             55             60
Thr Ser Gln Ala Pro Gly Tyr Arg Ala Ala Ala Leu Gly His His
      65             70             75             80
His His Pro Gly His Val Gly Ser Tyr Ser Ser Ala Ala Phe Asn Ser
      85             90             95
Thr Arg Asp Phe Leu Phe Arg Asn Arg Gly Phe Gly Asp Ala Ala Ala
      100            105            110
Ala Ala Ser Ala Gln His Ser Leu Phe Ala Ala Ser Ala Gly Gly Phe
      115            120            125
Gly Gly Pro His Gly His Thr Asp Ala Ala Gly His Leu Leu Phe Ser
      130            135            140
Gly Leu His Glu Gln Ala Ala Gly His Ala Ser Pro Asn Val Val Asn
      145            150            155            160
Gly Gln Met Arg Leu Gly Phe Ser Gly Asp Met Tyr Pro Arg Pro Glu
      165            170            175
Gln Tyr Gly Gln Val Thr Ser Pro Arg Ser Glu His Tyr Ala Ala Pro
      180            185            190

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Gln Leu His Gly Tyr Gly Pro Met Asn Val Asn Met Ala Ala His His
 195 200 205
 Gly Ala Gly Ala Phe Phe Arg Tyr Met Arg Gln Pro Ile Lys Gln Glu
 210 215 220
 Leu Ile Cys Lys Trp Ile Glu Pro Glu Gln Leu Ala Asn Pro Lys Lys
 225 230 235 240
 Ser Cys Asn Lys Thr Phe Ser Thr Met His Glu Leu Val Thr His Val
 245 250 255
 Thr Val Glu His Val Gly Gly Pro Glu Gln Ser Asn His Ile Cys Phe
 260 265 270
 Trp Glu Glu Cys Pro Arg Glu Gly Lys Pro Phe Lys Ala Lys Tyr Lys
 275 280 285
 Leu Val Asn His Ile Arg Val His Thr Gly Glu Lys Pro Phe Pro Cys
 290 295 300
 Pro Phe Pro Gly Cys Gly Lys Val Phe Ala Arg Ser Glu Asn Leu Lys
 305 310 315 320
 Ile His Lys Arg Thr His Thr Gly Glu Lys Pro Phe Lys Cys Glu Phe
 325 330 335
 Glu Gly Cys Asp Arg Arg Phe Ala Asn Ser Ser Asp Arg Lys Lys His
 340 345 350
 Met His Val His Thr Ser Asp Lys Pro Tyr Leu Cys Lys Met Cys Asp
 355 360 365
 Lys Ser Tyr Thr His Pro Ser Ser Leu Arg Lys His Met Lys Val His
 370 375 380
 Glu Ser Ser Ser Gln Gly Ser Gln Pro Ser Pro Ala Ala Ser Ser Gly
 385 390 395 400
 Tyr Glu Ser Ser Thr Pro Pro Thr Ile Val Ser Pro Thr Thr Asp Asn
 405 410 415
 Pro Thr Thr Ser Ser Met Ser Pro Ser Ser Ser Ala Val His His Thr

420

425

430

Ala Gly His Ser Ala Leu Ser Ser Asn Phe Asn Glu Trp Tyr Val

435

440

445

<210> 62

<211> 2346

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (710).. (2008)

<400> 62

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 acaatcgtaa gcttgatggt gttttccctg actgggtagt tgaagcatct catgaatgtc 180
 agccaaattc cgtacagttc ggtgcggatc cgaacgaaac acctcctgta ccaggttccc 240
 gtgtcgctct caatttcaat cagctcatct atttgittgg gagtcttgat tttatttacc 300
 gtgaagacct tctctggctg gccccgggct ctcatgttgg tgtcatgaat taacttcaga 360
 atcatccagg ctcatcatg ttttcccacc tccagcaaga accgagggtt ttctggcatg 420
 aaggtgagag ccaccacaga ggagacgcat gggagcgcac agacgatgac gaagacgcgc 480
 cacgtgtgga actggtaggc tgaacctatg ctgaagctcc acccgtagtg gggaatgatg 540
 gcccaggcat ggcggagggt agatgccgcc aatcatccag aacatgcaga agccgctgct 600
 ggggagcttg gggctgcggt ggtggcgggt gacgggcttc gggacgcgga gcgacgcggc 660
 ctacgcgggc ggacggccgt gggaactcgg gcagccgacc cgtcccgcc atg gag atg 718

Met Glu Met

1

gag aag gag ttc gag gag atc gac aag gct ggg aac tgg gcg gct att 766

Glu Lys Glu Phe Glu Glu Ile Asp Lys Ala Gly Asn Trp Ala Ala Ile
 5 10 15
 tac cag gac att cga cat gaa gcc agc gac ttc cca tgc aaa gtc gcg 814
 Tyr Gln Asp Ile Arg His Glu Ala Ser Asp Phe Pro Cys Lys Val Ala
 20 25 30 35
 aag ctt cct aag aac aaa aac cgg aac agg tac cga gat gtc agc cct 862
 Lys Leu Pro Lys Asn Lys Asn Arg Asn Arg Tyr Arg Asp Val Ser Pro
 40 45 50
 ttt gac cac agt cgg att aaa ttg cac cag gaa gat aat gac tat atc 910
 Phe Asp His Ser Arg Ile Lys Leu His Gln Glu Asp Asn Asp Tyr Ile
 55 60 65
 aat gcc agc ttg ata aaa atg gaa gaa gcc cag agg agc tat att ctc 958
 Asn Ala Ser Leu Ile Lys Met Glu Glu Ala Gln Arg Ser Tyr Ile Leu
 70 75 80
 acc cag ggc cct tta cca aac aca tgt ggg cac ttc tgg gag atg gtg 1006
 Thr Gln Gly Pro Leu Pro Asn Thr Cys Gly His Phe Trp Glu Met Val
 85 90 95
 tgg gag cag aag agc agg ggc gtg gtc atg ctc aac cgc atc atg gag 1054
 Trp Glu Gln Lys Ser Arg Gly Val Val Met Leu Asn Arg Ile Met Glu
 100 105 110 115
 aaa ggc tgc tta aaa tgt gcc cag tat tgg cca cag caa gaa gaa aag 1102
 Lys Gly Ser Leu Lys Cys Ala Gln Tyr Trp Pro Gln Gln Glu Glu Lys
 120 125 130
 gag atg gtc ttt gat gac aca ggt ttg aag ttg aca cta atc tct gaa 1150
 Glu Met Val Phe Asp Asp Thr Gly Leu Lys Leu Thr Leu Ile Ser Glu
 135 140 145
 gat gtc aag tca tat tac aca gta cga cag ttg gag ttg gaa aac ctg 1198
 Asp Val Lys Ser Tyr Tyr Thr Val Arg Gln Leu Glu Leu Glu Asn Leu
 150 155 160

act acc aag gag act cga gag atc ctg cat ttc cac tac acc aca tgg 1246
 Thr Thr Lys Glu Thr Arg Glu Ile Leu His Phe His Tyr Thr Thr Trp
 165 170 175
 cct gac ttt gga gtc ccc gag tca ccg gct tct ttc ctc aat ttc ctt 1294
 Pro Asp Phe Gly Val Pro Glu Ser Pro Ala Ser Phe Leu Asn Phe Leu
 180 185 190 195
 ttc aaa gtc cga gag tca ggc tca ctc agc ctg gag cat ggc ccc att 1342
 Phe Lys Val Arg Glu Ser Gly Ser Leu Ser Leu Glu His Gly Pro Ile
 200 205 210
 gtg gtc cac tgc agc gcc ggc atc ggg agg tca ggg acc ttc tgt ctg 1390
 Val Val His Cys Ser Ala Gly Ile Gly Arg Ser Gly Thr Phe Cys Leu
 215 220 225
 gct gac acc tgc ctc tta ctg atg gac aag agg aaa gac cca tct tcc 1438
 Ala Asp Thr Cys Leu Leu Leu Met Asp Lys Arg Lys Asp Pro Ser Ser
 230 235 240
 gtg gac atc aag aaa gta ctg ctg gag atg cgc agg ttc cgc atg ggg 1486
 Val Asp Ile Lys Lys Val Leu Leu Glu Met Arg Arg Phe Arg Met Gly
 245 250 255
 ctc atc cag act gcc gac cag ctg cgc ttc tcc tac ctg gct gtc atc 1534
 Leu Ile Gln Thr Ala Asp Gln Leu Arg Phe Ser Tyr Leu Ala Val Ile
 260 265 270 275
 gag ggc gcc aag ttc atc atg ggc gac tcg tca gtg cag gat cag tgg 1582
 Glu Gly Ala Lys Phe Ile Met Gly Asp Ser Ser Val Gln Asp Gln Trp
 280 285 290
 aag gag ctc tcc cgg gag gat cta gac ctt cca ccc gag cac gtg ccc 1630
 Lys Glu Leu Ser Arg Glu Asp Leu Asp Leu Pro Pro Glu His Val Pro
 295 300 305
 cca cct ccc cgg cca ccc aaa cgc aca ctg gag cct cac aac ggg aag 1678
 Pro Pro Pro Arg Pro Pro Lys Arg Thr Leu Glu Pro His Asn Gly Lys

310	315	320	
tgc aag gag ctc ttc tcc agc cac cag tgg gtg agc gag gag acc tgt			1726
Cys Lys Glu Leu Phe Ser Ser His Gln Trp Val Ser Glu Glu Thr Cys			
325	330	335	
ggg gat gaa gac agc ctg gcc aga gag gaa ggc aga gcc cag tca agt			1774
Gly Asp Glu Asp Ser Leu Ala Arg Glu Glu Gly Arg Ala Gln Ser Ser			
340	345	350	355
gcc atg cac agc gtg agc agc atg agt cca gac act gaa gtt agg aga			1822
Ala Met His Ser Val Ser Ser Met Ser Pro Asp Thr Glu Val Arg Arg			
	360	365	370
cgg atg gtg ggt gga ggt ctt caa agt gct cag gcg tct gtc ccc acc			1870
Arg Met Val Gly Gly Gly Leu Gln Ser Ala Gln Ala Ser Val Pro Thr			
	375	380	385
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Glu Glu Glu Leu Ser Ser Thr Glu Glu Glu His Lys Ala His Trp Pro			
	390	395	400
agt cac tgg aag ccc ttc ctg gtc aat gtg tgc atg gcc acg ctc ctg			1966
Ser His Trp Lys Pro Phe Leu Val Asn Val Cys Met Ala Thr Leu Leu			
	405	410	415
gcc acc ggc gcg tac ttg tgc tac cgg gtg tgt ttt cac tga			2008
Ala Thr Gly Ala Tyr Leu Cys Tyr Arg Val Cys Phe His			
420	425	430	
cagacigggg ggcactgccg ctgcccagct taggatgcgg tctgcggcgt ctgacctggt			2068
gtagagggaa caacaactcg caagcctgct ctggaactgg aagggcctgc cccaggaggg			2128
tattagtgcg ctgggccttg aaggagcccc tgggtcccacg aacagagtct aatctcaggg			2188
ccttaacctg ttcaggagaa gtagaggaaa tgccaaatac tcttcttgct ctcacctcac			2248
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<210> 63

<211> 432

<212> PRT

<213> Mus musculus

<400> 63

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1 5 10 15

Ala Ala Ile Tyr Gln Asp Ile Arg His Glu Ala Ser Asp Phe Pro Cys

20 25 30

Lys Val Ala Lys Leu Pro Lys Asn Lys Asn Arg Asn Arg Tyr Arg Asp

35 40 45

Val Ser Pro Phe Asp His Ser Arg Ile Lys Leu His Gln Glu Asp Asn

50 55 60

Asp Tyr Ile Asn Ala Ser Leu Ile Lys Met Glu Glu Ala Gln Arg Ser

65 70 75 80

Tyr Ile Leu Thr Gln Gly Pro Leu Pro Asn Thr Cys Gly His Phe Trp

85 90 95

Glu Met Val Trp Glu Gln Lys Ser Arg Gly Val Val Met Leu Asn Arg

100 105 110

Ile Met Glu Lys Gly Ser Leu Lys Cys Ala Gln Tyr Trp Pro Gln Gln

115 120 125

Glu Glu Lys Glu Met Val Phe Asp Asp Thr Gly Leu Lys Leu Thr Leu

130 135 140

Ile Ser Glu Asp Val Lys Ser Tyr Tyr Thr Val Arg Gln Leu Glu Leu

145 150 155 160

Glu Asn Leu Thr Thr Lys Glu Thr Arg Glu Ile Leu His Phe His Tyr

165 170 175

Thr Thr Trp Pro Asp Phe Gly Val Pro Glu Ser Pro Ala Ser Phe Leu

180	185	190
Asn Phe Leu Phe Lys Val Arg Glu Ser Gly Ser Leu Ser Leu Glu His		
195	200	205
Gly Pro Ile Val Val His Cys Ser Ala Gly Ile Gly Arg Ser Gly Thr		
210	215	220
Phe Cys Leu Ala Asp Thr Cys Leu Leu Leu Met Asp Lys Arg Lys Asp		
225	230	235
Pro Ser Ser Val Asp Ile Lys Lys Val Leu Leu Glu Met Arg Arg Phe		
245	250	255
Arg Met Gly Leu Ile Gln Thr Ala Asp Gln Leu Arg Phe Ser Tyr Leu		
260	265	270
Ala Val Ile Glu Gly Ala Lys Phe Ile Met Gly Asp Ser Ser Val Gln		
275	280	285
Asp Gln Trp Lys Glu Leu Ser Arg Glu Asp Leu Asp Leu Pro Pro Glu		
290	295	300
His Val Pro Pro Pro Pro Arg Pro Pro Lys Arg Thr Leu Glu Pro His		
305	310	315
Asn Gly Lys Cys Lys Glu Leu Phe Ser Ser His Gln Trp Val Ser Glu		
325	330	335
Glu Thr Cys Gly Asp Glu Asp Ser Leu Ala Arg Glu Glu Gly Arg Ala		
340	345	350
Gln Ser Ser Ala Met His Ser Val Ser Ser Met Ser Pro Asp Thr Glu		
355	360	365
Val Arg Arg Arg Met Val Gly Gly Gly Leu Gln Ser Ala Gln Ala Ser		
370	375	380
Val Pro Thr Glu Glu Glu Leu Ser Ser Thr Glu Glu Glu His Lys Ala		
385	390	395
His Trp Pro Ser His Trp Lys Pro Phe Leu Val Asn Val Cys Met Ala		
405	410	415

Thr Leu Leu Ala Thr Gly Ala Tyr Leu Cys Tyr Arg Val Cys Phe His

420

425

430

<210> 64

<211> 445

<212> DNA

<213> Mus musculus

<400> 64

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 actacaaggt ttgaaggccc agtat 445

<210> 65

<211> 3103

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (109).. (1536)

<400> 65

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 Met Gly Pro
 1
 gcg ccg ggt caa ggg ctg tac cgc tct ccg atg ccc ggg gcg gcc tat 165
 Ala Pro Gly Gln Gly Leu Tyr Arg Ser Pro Met Pro Gly Ala Ala Tyr
 5 10 15
 ccg aga cca ggt atg ctg cca ggt agc cga atg aca cct cag gga cct 213
 Pro Arg Pro Gly Met Leu Pro Gly Ser Arg Met Thr Pro Gln Gly Pro
 20 25 30 35
 tcc atg gga cct cct ggc tat ggg ggg aac cct tca gtc cga cct ggt 261
 Ser Met Gly Pro Pro Gly Tyr Gly Gly Asn Pro Ser Val Arg Pro Gly
 40 45 50
 ctg gcc cag tca ggg atg gac cag tcc cgc aag aga cct gca cct caa 309
 Leu Ala Gln Ser Gly Met Asp Gln Ser Arg Lys Arg Pro Ala Pro Gln
 55 60 65
 cag atc cag cag gtc cag cag cag gcg gtc caa aat cga aat cac aat 357
 Gln Ile Gln Gln Val Gln Gln Gln Ala Val Gln Asn Arg Asn His Asn
 70 75 80
 gca aag aaa aag aag atg gct gac aaa atc cta cct caa agg att cgg 405
 Ala Lys Lys Lys Lys Met Ala Asp Lys Ile Leu Pro Gln Arg Ile Arg
 85 90 95
 gaa ctg gtc cca gaa tca cag gcc tac atg gat ctc ctg gct ttt gaa 453
 Glu Leu Val Pro Glu Ser Gln Ala Tyr Met Asp Leu Leu Ala Phe Glu
 100 105 110 115
 agg aaa ctg gac cag act att atg agg aag cgg cta gat atc cag gag 501
 Arg Lys Leu Asp Gln Thr Ile Met Arg Lys Arg Leu Asp Ile Gln Glu
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 gcc ttg aaa cgt ccc atc aag caa aaa cgg aag ctg cga att ttc att 549
 Ala Leu Lys Arg Pro Ile Lys Gln Lys Arg Lys Leu Arg Ile Phe Ile

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Ser Asn Thr Phe Asn Pro Ala Lys Ser Asp Ala Glu Asp Gly Glu Gly			
150	155	160	
acg gtg gct tcc tgg gag ctc cgg gta gaa ggc cgg ctc ctg gag gac	645		
Thr Val Ala Ser Trp Glu Leu Arg Val Glu Gly Arg Leu Leu Glu Asp			
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gcc gcc ttg tcc aaa tat gac gcc acc aag caa aag aga aag ttc tct	693		
Ala Ala Leu Ser Lys Tyr Asp Ala Thr Lys Gln Lys Arg Lys Phe Ser			
180	185	190	195
tcc ttt ttt aag tcc ttg gtg atc gaa ctg gac aaa gac ctc tat ggc	741		
Ser Phe Phe Lys Ser Leu Val Ile Glu Leu Asp Lys Asp Leu Tyr Gly			
200	205	210	
cca gac aac cat ctg gta gaa tgg cac agg acc gcc act acc cag gag	789		
Pro Asp Asn His Leu Val Glu Trp His Arg Thr Ala Thr Thr Gln Glu			
215	220	225	
acc gat ggc ttc cag gtg aag cgg cca gga gat gtg aat gta cgg tgt	837		
Thr Asp Gly Phe Gln Val Lys Arg Pro Gly Asp Val Asn Val Arg Cys			
230	235	240	
act gtc ctg ctg atg ctg gac tac cag ccc ccc cag ttt aaa tta gac	885		
Thr Val Leu Leu Met Leu Asp Tyr Gln Pro Pro Gln Phe Lys Leu Asp			
245	250	255	
cct cgc ctg gct cgg ctc ttg ggc atc cat acc cag aca cgt cca gtg	933		
Pro Arg Leu Ala Arg Leu Leu Gly Ile His Thr Gln Thr Arg Pro Val			
260	265	270	275
atc atc caa gca ctg tgg cag tat att aaa aca cac aag ctc cag gac	981		
Ile Ile Gln Ala Leu Trp Gln Tyr Ile Lys Thr His Lys Leu Gln Asp			
280	285	290	
cct cac gag cga gag ttt gtt ctc tgt gac aag tac ctc cag cag atc	1029		

Pro His Glu Arg Glu Phe Val Leu Cys Asp Lys Tyr Leu Gln Gln Ile
 295 300 305
 ttt gaa tct cag cgg atg aag ttc tca gag atc cct cag cgg ctc cac 1077
 Phe Glu Ser Gln Arg Met Lys Phe Ser Glu Ile Pro Gln Arg Leu His
 310 315 320
 gcc ttg ctt atg cca cca gag ccc atc atc atc aat cat gtc atc agt 1125
 Ala Leu Leu Met Pro Pro Glu Pro Ile Ile Ile Asn His Val Ile Ser
 325 330 335
 gtg gac cca aat gac cag aaa aag acc gcg tgc tat gac att gac gtg 1173
 Val Asp Pro Asn Asp Gln Lys Lys Thr Ala Cys Tyr Asp Ile Asp Val
 340 345 350 355
 gag gtg gat gac act ctg aag acc cag atg aac tct ttc ctg ttg tcc 1221
 Glu Val Asp Asp Thr Leu Lys Thr Gln Met Asn Ser Phe Leu Leu Ser
 360 365 370
 act gcc agc cag cag gag atc gcc act cta gac aac aag atc cat gag 1269
 Thr Ala Ser Gln Gln Glu Ile Ala Thr Leu Asp Asn Lys Ile His Glu
 375 380 385
 acg ata gag acc atc aac cag ctg aag acc cag cga gag ttc atg ttg 1317
 Thr Ile Glu Thr Ile Asn Gln Leu Lys Thr Gln Arg Glu Phe Met Leu
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 agc ttg ccc gag ccc tca ggt ttc atc aat gat tgg ctt cag tcc cag 1365
 Ser Leu Pro Glu Pro Ser Gly Phe Ile Asn Asp Trp Leu Gln Ser Gln
 405 410 415
 tgc agg ggc ctc aag acg atg act gat gtg gtg ggt aac ccg gaa gag 1413
 Cys Arg Gly Leu Lys Thr Met Thr Asp Val Val Gly Asn Pro Glu Glu
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 gag cgt cgt gct gag ttc tac ttc cag ccc tgg gct cag gag gct gtg 1461
 Glu Arg Arg Ala Glu Phe Tyr Phe Gln Pro Trp Ala Gln Glu Ala Val
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 Cys Arg Tyr Phe Tyr Ser Lys Val Gln Gln Arg Arg Gln Glu Leu Glu
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 Gln Ala Leu Gly Ile Arg Asn Thr
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<210> 66

<211> 475

<212> PRT

<213> Mus musculus

<400> 66

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				20					25					30	
Gln	Gly	Pro	Ser	Met	Gly	Pro	Pro	Gly	Tyr	Gly	Gly	Asn	Pro	Ser	Val
				35				40						45	
Arg	Pro	Gly	Leu	Ala	Gln	Ser	Gly	Met	Asp	Gln	Ser	Arg	Lys	Arg	Pro
				50				55						60	
Ala	Pro	Gln	Gln	Ile	Gln	Gln	Val	Gln	Gln	Gln	Ala	Val	Gln	Asn	Arg
				65				70						75	
Asn	His	Asn	Ala	Lys	Lys	Lys	Lys	Met	Ala	Asp	Lys	Ile	Leu	Pro	Gln
				85				90						95	
Arg	Ile	Arg	Glu	Leu	Val	Pro	Glu	Ser	Gln	Ala	Tyr	Met	Asp	Leu	Leu
				100				105						110	
Ala	Phe	Glu	Arg	Lys	Leu	Asp	Gln	Thr	Ile	Met	Arg	Lys	Arg	Leu	Asp
				115				120						125	
Ile	Gln	Glu	Ala	Leu	Lys	Arg	Pro	Ile	Lys	Gln	Lys	Arg	Lys	Leu	Arg
				130				135						140	
Ile	Phe	Ile	Ser	Asn	Thr	Phe	Asn	Pro	Ala	Lys	Ser	Asp	Ala	Glu	Asp

145	150	155	160
Gly Glu Gly Thr Val	Ala Ser Trp Glu Leu Arg Val	Glu Gly Arg Leu	
	165	170	175
Leu Glu Asp Ala Ala	Leu Ser Lys Tyr Asp Ala Thr	Lys Gln Lys Arg	
	180	185	190
Lys Phe Ser Ser Phe Phe	Lys Ser Leu Val Ile Glu Leu Asp	Lys Asp	
	195	200	205
Leu Tyr Gly Pro Asp Asn His	Leu Val Glu Trp His Arg Thr	Ala Thr	
	210	215	220
Thr Gln Glu Thr Asp Gly Phe	Gln Val Lys Arg Pro Gly Asp	Val Asn	
	225	230	235
Val Arg Cys Thr Val Leu	Leu Met Leu Asp Tyr Gln Pro	Pro Gln Phe	
	245	250	255
Lys Leu Asp Pro Arg Leu	Ala Arg Leu Leu Gly Ile His Thr	Gln Thr	
	260	265	270
Arg Pro Val Ile Ile Gln	Ala Leu Trp Gln Tyr Ile Lys Thr	His Lys	
	275	280	285
Leu Gln Asp Pro His Glu	Arg Glu Phe Val Leu Cys Asp	Lys Tyr Leu	
	290	295	300
Gln Gln Ile Phe Glu Ser	Gln Arg Met Lys Phe Ser Glu Ile	Pro Gln	
	305	310	315
Arg Leu His Ala Leu	Leu Met Pro Pro Glu Pro Ile Ile	Ile Asn His	
	325	330	335
Val Ile Ser Val Asp Pro	Asn Asp Gln Lys Lys Thr Ala Cys	Tyr Asp	
	340	345	350
Ile Asp Val Glu Val Asp	Asp Thr Leu Lys Thr Gln Met	Asn Ser Phe	
	355	360	365
Leu Leu Ser Thr Ala Ser	Gln Gln Glu Ile Ala Thr Leu	Asp Asn Lys	
	370	375	380

Ile His Glu Thr Ile Glu Thr Ile Asn Gln Leu Lys Thr Gln Arg Glu
 385 390 395 400
 Phe Met Leu Ser Leu Pro Glu Pro Ser Gly Phe Ile Asn Asp Trp Leu
 405 410 415
 Gln Ser Gln Cys Arg Gly Leu Lys Thr Met Thr Asp Val Val Gly Asn
 420 425 430
 Pro Glu Glu Glu Arg Arg Ala Glu Phe Tyr Phe Gln Pro Trp Ala Gln
 435 440 445
 Glu Ala Val Cys Arg Tyr Phe Tyr Ser Lys Val Gln Gln Arg Arg Gln
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 Glu Leu Glu Gln Ala Leu Gly Ile Arg Asn Thr
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<210> 67

<211> 2187

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (24).. (2012)

<400> 67

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Met Ser His Val Ala Val Glu Asn Ala Leu

1

5

10

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Gly Leu Asp Gln Gln Phe Ala Gly Leu Asp Leu Asn Ser Ser Asp Asn

15

20

25

cag agt gga gga agt aca gca agc aaa ggg cgt tat atc cca cct cat 149
 Gln Ser Gly Gly Ser Thr Ala Ser Lys Gly Arg Tyr Ile Pro Pro His
 30 35 40
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 Leu Arg Asn Arg Glu Ala Thr Lys Gly Phe Tyr Asp Lys Asp Ser Ser
 45 50 55
 ggg tgg agt tct agt aaa gat aag gat gca tac agc agt ttt gga tca 245
 Gly Trp Ser Ser Ser Lys Asp Lys Asp Ala Tyr Ser Ser Phe Gly Ser
 60 65 70
 cgg ggt gat tca aga ggg aag tct agc ttc ttt gga gat cgt gga agt 293
 Arg Gly Asp Ser Arg Gly Lys Ser Ser Phe Phe Gly Asp Arg Gly Ser
 75 80 85 90
 gga tca agg gga agg ttt gat gat cgt gga cgg gga gac tat gat ggc 341
 Gly Ser Arg Gly Arg Phe Asp Asp Arg Gly Arg Gly Asp Tyr Asp Gly
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 att ggt ggc cgt gga gat aga agt ggc ttt ggc aaa ttt gaa aga ggt 389
 Ile Gly Gly Arg Gly Asp Arg Ser Gly Phe Gly Lys Phe Glu Arg Gly
 110 115 120
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 Gly Asn Ser Arg Trp Cys Asp Lys Ser Asp Glu Asp Asp Trp Ser Lys
 125 130 135
 cca ctc cca cca agt gaa cga ttg gaa cag gaa ctc ttt tct gga ggc 485
 Pro Leu Pro Pro Ser Glu Arg Leu Glu Gln Glu Leu Phe Ser Gly Gly
 140 145 150
 aat act ggg att aac ttt gag aaa tat gat gac att cca gtc gaa gca 533
 Asn Thr Gly Ile Asn Phe Glu Lys Tyr Asp Asp Ile Pro Val Glu Ala
 155 160 165 170
 aca ggc aac aac tgt cct cca cac att gaa agt ttc agt gat gtc gag 581
 Thr Gly Asn Asn Cys Pro Pro His Ile Glu Ser Phe Ser Asp Val Glu

175	180	185	
atg gga gaa att att atg gga aac att gag ctt act cgt tat act cgc	629		
Met Gly Glu Ile Ile Met Gly Asn Ile Glu Leu Thr Arg Tyr Thr Arg			
190	195	200	
cca act cca gtg cag aag cat gct att cct att atc aaa gag aaa aga	677		
Pro Thr Pro Val Gln Lys His Ala Ile Pro Ile Ile Lys Glu Lys Arg			
205	210	215	
gac ttg atg gct tgt gct caa aca ggc tct gga aaa act gca gca ttt	725		
Asp Leu Met Ala Cys Ala Gln Thr Gly Ser Gly Lys Thr Ala Ala Phe			
220	225	230	
ctc ttg ccc atc ttg agt cag atc tat gct gat ggt cca gga gaa gct	773		
Leu Leu Pro Ile Leu Ser Gln Ile Tyr Ala Asp Gly Pro Gly Glu Ala			
235	240	245	250
ctg agg gct atg aag gaa aat gga aga tat ggc cgt cgt aaa cag tat	821		
Leu Arg Ala Met Lys Glu Asn Gly Arg Tyr Gly Arg Arg Lys Gln Tyr			
255	260	265	
cca atc tct ttg gta ctg gca cca acg aga gaa ttg gca gtg cag atc	869		
Pro Ile Ser Leu Val Leu Ala Pro Thr Arg Glu Leu Ala Val Gln Ile			
270	275	280	
tat gag gaa gcc aga aaa ttc tca tac cga tct aga gtc cgt cct tgc	917		
Tyr Glu Glu Ala Arg Lys Phe Ser Tyr Arg Ser Arg Val Arg Pro Cys			
285	290	295	
gtg gtt tat ggt ggt gct gaa att ggc cag cag att cga gac tta gaa	965		
Val Val Tyr Gly Gly Ala Glu Ile Gly Gln Gln Ile Arg Asp Leu Glu			
300	305	310	
cgt gga tgc cac ttg tta gta gcc act cca gga cgt cta gtg gat atg	1013		
Arg Gly Cys His Leu Leu Val Ala Thr Pro Gly Arg Leu Val Asp Met			
315	320	325	330
atg gag aga ggg aag atc ggg tta gac ttc tgc aaa tac ctg gtg tta	1061		

Met Glu Arg Gly Lys Ile Gly Leu Asp Phe Cys Lys Tyr Leu Val Leu
 335 340 345
 gat gaa gct gac cgg atg tta gat atg ggg ttt gaa cct cag ata cga 1109
 Asp Glu Ala Asp Arg Met Leu Asp Met Gly Phe Glu Pro Gln Ile Arg
 350 355 360
 aga ata gtt gaa caa gac act atg cct cca aaa ggt gtc cgc cac act 1157
 Arg Ile Val Glu Gln Asp Thr Met Pro Pro Lys Gly Val Arg His Thr
 365 370 375
 atg atg ttt agt gct act ttt cct aag gaa ata cag atg ctg gcc cgt 1205
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 380 385 390
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 395 400 405 410
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 415 420 425
 aaa agg tca ttt ctg ctt gac ctt cta aat gca aca ggc aag gat tcc 1349
 Lys Arg Ser Phe Leu Leu Asp Leu Leu Asn Ala Thr Gly Lys Asp Ser
 430 435 440
 ctg act cta gtg ttt gtg gag acc aaa aag ggg gca gat tgc ctg gag 1397
 Leu Thr Leu Val Phe Val Glu Thr Lys Lys Gly Ala Asp Ser Leu Glu
 445 450 455
 gat ttc tta tac cat gaa gga tat gct tgt acc agt atc cat gga gac 1445
 Asp Phe Leu Tyr His Glu Gly Tyr Ala Cys Thr Ser Ile His Gly Asp
 460 465 470
 cgt tct cag aga gat agg gaa gag gcc ctt cac cag ttc cgc tca gga 1493
 Arg Ser Gln Arg Asp Arg Glu Glu Ala Leu His Gln Phe Arg Ser Gly
 475 480 485 490

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aaa agc cca att cta gtg gct aca gca gta gca gca aga gga ctg gat 1541
Lys Ser Pro Ile Leu Val Ala Thr Ala Val Ala Ala Arg Gly Leu Asp
      495              500              505

att tca aat gtg aag cat gtt att aat ttt gac ctg cct agt gat atc 1589
Ile Ser Asn Val Lys His Val Ile Asn Phe Asp Leu Pro Ser Asp Ile
      510              515              520

gaa gaa tat gtg cat cgc ata ggc cgt aca ggc cgt gtg gga aac ctt 1637
Glu Glu Tyr Val His Arg Ile Gly Arg Thr Gly Arg Val Gly Asn Leu
      525              530              535

ggg ctt gcc acc tca ttc ttt aat gaa agg aat ata aat atc aca aag 1685
Gly Leu Ala Thr Ser Phe Phe Asn Glu Arg Asn Ile Asn Ile Thr Lys
      540              545              550

gat tta ctg gat ctt ctt gtt gaa gca aaa caa gaa gtg cct tct tgg 1733
Asp Leu Leu Asp Leu Leu Val Glu Ala Lys Gln Glu Val Pro Ser Trp
      555              560              565              570

tta gag aac atg gct ttt gaa cac cac tac aag ggt agc agt cgt gga 1781
Leu Glu Asn Met Ala Phe Glu His His Tyr Lys Gly Ser Ser Arg Gly
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cgt tct aag agc agt cga ttt agt gga ggg ttt ggt gcc aga gac tac 1829
Arg Ser Lys Ser Ser Arg Phe Ser Gly Gly Phe Gly Ala Arg Asp Tyr
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cga cag agt agc ggt gcc agc agt tcc agc ttc agc agc agc cgt gca 1877
Arg Gln Ser Ser Gly Ala Ser Ser Ser Ser Phe Ser Ser Ser Arg Ala
      605              610              615

agc agc agt cga agt ggt gga ggt ggc cat ggc ggc agt cga gga ttt 1925
Ser Ser Ser Arg Ser Gly Gly Gly Gly His Gly Gly Ser Arg Gly Phe
      620              625              630

ggg gga ggt ggc tac gga ggc ttt tac aac agt gat gga tat gga ggg 1973
Gly Gly Gly Gly Tyr Gly Gly Phe Tyr Asn Ser Asp Gly Tyr Gly Gly

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635 640 645 650
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 655 660
 tagtaggtca ccctgccaaa caagctaata tggaaaccac atgtaactta gccagactat 2082
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<210> 68

<211> 662

<212> PRT

<213> Mus musculus

<400> 68

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 35 40 45
 Thr Lys Gly Phe Tyr Asp Lys Asp Ser Ser Gly Trp Ser Ser Ser Lys
 50 55 60
 Asp Lys Asp Ala Tyr Ser Ser Phe Gly Ser Arg Gly Asp Ser Arg Gly
 65 70 75 80
 Lys Ser Ser Phe Phe Gly Asp Arg Gly Ser Gly Ser Arg Gly Arg Phe
 85 90 95
 Asp Asp Arg Gly Arg Gly Asp Tyr Asp Gly Ile Gly Gly Arg Gly Asp
 100 105 110
 Arg Ser Gly Phe Gly Lys Phe Glu Arg Gly Gly Asn Ser Arg Trp Cys

115	120	125
Asp Lys Ser Asp Glu Asp Asp Trp Ser Lys Pro Leu Pro Pro Ser Glu		
130	135	140
Arg Leu Glu Gln Glu Leu Phe Ser Gly Gly Asn Thr Gly Ile Asn Phe		
145	150	155
Glu Lys Tyr Asp Asp Ile Pro Val Glu Ala Thr Gly Asn Asn Cys Pro		
165	170	175
Pro His Ile Glu Ser Phe Ser Asp Val Glu Met Gly Glu Ile Ile Met		
180	185	190
Gly Asn Ile Glu Leu Thr Arg Tyr Thr Arg Pro Thr Pro Val Gln Lys		
195	200	205
His Ala Ile Pro Ile Ile Lys Glu Lys Arg Asp Leu Met Ala Cys Ala		
210	215	220
Gln Thr Gly Ser Gly Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu Ser		
225	230	235
Gln Ile Tyr Ala Asp Gly Pro Gly Glu Ala Leu Arg Ala Met Lys Glu		
245	250	255
Asn Gly Arg Tyr Gly Arg Arg Lys Gln Tyr Pro Ile Ser Leu Val Leu		
260	265	270
Ala Pro Thr Arg Glu Leu Ala Val Gln Ile Tyr Glu Glu Ala Arg Lys		
275	280	285
Phe Ser Tyr Arg Ser Arg Val Arg Pro Cys Val Val Tyr Gly Gly Ala		
290	295	300
Glu Ile Gly Gln Gln Ile Arg Asp Leu Glu Arg Gly Cys His Leu Leu		
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Val Ala Thr Pro Gly Arg Leu Val Asp Met Met Glu Arg Gly Lys Ile		
325	330	335
Gly Leu Asp Phe Cys Lys Tyr Leu Val Leu Asp Glu Ala Asp Arg Met		
340	345	350

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 355 360 365
 Thr Met Pro Pro Lys Gly Val Arg His Thr Met Met Phe Ser Ala Thr
 370 375 380
 Phe Pro Lys Glu Ile Gln Met Leu Ala Arg Asp Phe Leu Asp Glu Tyr
 385 390 395 400
 Ile Phe Leu Ala Val Gly Arg Val Gly Ser Thr Ser Glu Asn Ile Thr
 405 410 415
 Gln Lys Val Val Trp Val Glu Glu Ile Asp Lys Arg Ser Phe Leu Leu
 420 425 430
 Asp Leu Leu Asn Ala Thr Gly Lys Asp Ser Leu Thr Leu Val Phe Val
 435 440 445
 Glu Thr Lys Lys Gly Ala Asp Ser Leu Glu Asp Phe Leu Tyr His Glu
 450 455 460
 Gly Tyr Ala Cys Thr Ser Ile His Gly Asp Arg Ser Gln Arg Asp Arg
 465 470 475 480
 Glu Glu Ala Leu His Gln Phe Arg Ser Gly Lys Ser Pro Ile Leu Val
 485 490 495
 Ala Thr Ala Val Ala Ala Arg Gly Leu Asp Ile Ser Asn Val Lys His
 500 505 510
 Val Ile Asn Phe Asp Leu Pro Ser Asp Ile Glu Glu Tyr Val His Arg
 515 520 525
 Ile Gly Arg Thr Gly Arg Val Gly Asn Leu Gly Leu Ala Thr Ser Phe
 530 535 540
 Phe Asn Glu Arg Asn Ile Asn Ile Thr Lys Asp Leu Leu Asp Leu Leu
 545 550 555 560
 Val Glu Ala Lys Gln Glu Val Pro Ser Trp Leu Glu Asn Met Ala Phe
 565 570 575
 Glu His His Tyr Lys Gly Ser Ser Arg Gly Arg Ser Lys Ser Ser Arg

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Phe	Ser	Gly	Gly	Phe	Gly	Ala	Arg	Asp	Tyr	Arg	Gln	Ser	Ser	Gly	Ala
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Ser	Ser	Ser	Ser	Phe	Ser	Ser	Ser	Arg	Ala	Ser	Ser	Ser	Arg	Ser	Gly
610				615				620							
Gly	Gly	Gly	His	Gly	Gly	Ser	Arg	Gly	Phe	Gly	Gly	Gly	Gly	Tyr	Gly
625				630				635				640			
Gly	Phe	Tyr	Asn	Ser	Asp	Gly	Tyr	Gly	Gly	Asn	Tyr	Asn	Ser	Gln	Gly
645				650				655							
Val	Asp	Trp	Trp	Gly	Asn										
660															

<210> 69

2163

<212> DNA

<213> Mus musculus

<220>

$\langle 221 \rangle$ CDS

$\langle 222 \rangle$ (296) .. (1711)

<400> 69

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1

ggg ttc ctt tgg acc ggc tct tgg ata ctg gtg ttg gtg ctc aac agc 346
 Gly Phe Leu Trp Thr Gly Ser Trp Ile Leu Val Leu Val Leu Asn Ser
 5 10 15
 ggc cca att caa gct ttc ccc aaa ccc gaa ggc agc caa gac aaa tcc 394
 Gly Pro Ile Gln Ala Phe Pro Lys Pro Glu Gly Ser Gln Asp Lys Ser
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 ctg cat aat aga gaa tta agt gca gaa aga cct ttg aat gaa cag atc 442
 Leu His Asn Arg Glu Leu Ser Ala Glu Arg Pro Leu Asn Glu Gln Ile
 35 40 45
 gct gag gca gag gca gac aag att aaa aag gca ttc cct tca gaa agc 490
 Ala Glu Ala Glu Ala Asp Lys Ile Lys Lys Ala Phe Pro Ser Glu Ser
 50 55 60 65
 aag ccg agt gaa agc aat tat tct tct gtc gat aac ttg aat ctg ctg 538
 Lys Pro Ser Glu Ser Asn Tyr Ser Ser Val Asp Asn Leu Asn Leu Leu
 70 75 80
 agg gca ata aca gaa aag gaa acc gtt gag aaa gag aga caa tcc ata 586
 Arg Ala Ile Thr Glu Lys Glu Thr Val Glu Lys Glu Arg Gln Ser Ile
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 aga agc ccc ccg ttt gat aac caa ctg aac gtg gaa gac gct gat tca 634
 Arg Ser Pro Pro Phe Asp Asn Gln Leu Asn Val Glu Asp Ala Asp Ser
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 acc aaa aat cgg aaa ctg atc gat gag tac gat tcc acc aag agt gga 682
 Thr Lys Asn Arg Lys Leu Ile Asp Glu Tyr Asp Ser Thr Lys Ser Gly
 115 120 125
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 130 135 140 145
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 Gly Thr Pro Leu Thr Ala Glu Asp Ile Val His Lys Ile Ala Thr Arg

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Ile Tyr Glu Glu Asn Asp Arg Gly Val Phe Asp Lys Ile Val Ser Lys			
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ctg ctg aat ctt ggc ctg atc act gaa agc cag gca cat act ctg gaa	874		
Leu Leu Asn Leu Gly Leu Ile Thr Glu Ser Gln Ala His Thr Leu Glu			
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gat gaa gta gca gaa gct tta caa aaa ctg att tca aaa gag gcc aac	922		
Asp Glu Val Ala Glu Ala Leu Gln Lys Leu Ile Ser Lys Glu Ala Asn			
195	200	205	
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Asn Tyr Glu Glu Thr Leu Asp Lys Pro Thr Ser Arg Thr Glu Asn Gln			
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gat ggg aaa ata cca gag aaa gtg act ccg gtg gca gca gtc caa gat	1018		
Asp Gly Lys Ile Pro Glu Lys Val Thr Pro Val Ala Ala Val Gln Asp			
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ggc ttc act aac cgt gaa aac gat gag acg gtg tct aac acc ttg acc	1066		
Gly Phe Thr Asn Arg Glu Asn Asp Glu Thr Val Ser Asn Thr Leu Thr			
245	250	255	
ttg tcc aat ggc ttg gaa agg aga act aac ccc cac agg gaa gac gac	1114		
Leu Ser Asn Gly Leu Glu Arg Arg Thr Asn Pro His Arg Glu Asp Asp			
260	265	270	
ttt gag gaa ctc cag tat ttc ccc aac ttc tat gca cta ctg aca agc	1162		
Phe Glu Glu Leu Gln Tyr Phe Pro Asn Phe Tyr Ala Leu Leu Thr Ser			
275	280	285	
atc gac tca gaa aaa gaa gca aaa gag aaa gaa acc ctg atc acc atc	1210		
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290	295	300	305
atg aag aca ttg att gac ttc gtg aaa atg atg gtg aaa tac ggt acg	1258		

Met Lys Thr Leu Ile Asp Phe Val Lys Met Met Val Lys Tyr Gly Thr
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 ata tct cca gag gaa ggc gtg tcc tac ctt gaa aac ttg gat gaa aca 1306
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 325 330 335
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 Ile Ala Leu Gln Thr Lys Asn Lys Leu Glu Lys Asn Thr Thr Asp Ser
 340 345 350
 aaa agt aag cta ttc cca gct cca cca gag aag agt cag gaa gaa aca 1402
 Lys Ser Lys Leu Phe Pro Ala Pro Pro Glu Lys Ser Gln Glu Glu Thr
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 gac agt acc aag gaa gaa gcc gcc aag atg gaa aag gaa tac gga agc 1450
 Asp Ser Thr Lys Glu Glu Ala Ala Lys Met Glu Lys Glu Tyr Gly Ser
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 cta aaa gac tct aca aaa gat gat aac tcc aac cta gga gga aag aca 1498
 Leu Lys Asp Ser Thr Lys Asp Asp Asn Ser Asn Leu Gly Gly Lys Thr
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 Asp Glu Ala Thr Gly Lys Thr Glu Ala Tyr Leu Glu Ala Ile Arg Lys
 405 410 415
 aac atc gaa tgg ctg aag aaa cat aac aag aag ggc aac aaa gaa gat 1594
 Asn Ile Glu Trp Leu Lys Lys His Asn Lys Lys Gly Asn Lys Glu Asp
 420 425 430
 tac gac ctt tca aag atg agg gac ttt atc aac caa caa gct gac gct 1642
 Tyr Asp Leu Ser Lys Met Arg Asp Phe Ile Asn Gln Gln Ala Asp Ala
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 Tyr Val Glu Lys Gly Ile Leu Asp Lys Glu Glu Ala Asn Ala Ile Lys
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cgc atc tac agc agc ctg tga aaatggcggg cagcttgagc cttcctgttg 1741

Arg Ile Tyr Ser Ser Leu

470

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tagaatcctt atttctctt gaatttacet tttgtaatca gagatgtgct gctctggaaa 1981

agactctaata gggttgaaca taagtctgaa cctactcccc actgtcctca gccccctgaa 2041

gctctgagag gccctgtctc ggcatgctag acacctgagc acctcactgg atgtttgtca 2101

taggatgtcg ttccactag tcgatctctg ttgggcacgg aaataaaccc acgtctcttc 2161

at 2163

<210> 70

<211> 471

<212> PRT

<213> Mus musculus

<400> 70

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Ser Gly Pro Ile Gln Ala Phe Pro Lys Pro Glu Gly Ser Gln Asp Lys

20 25 30

Ser Leu His Asn Arg Glu Leu Ser Ala Glu Arg Pro Leu Asn Glu Gln

35 40 45

Ile Ala Glu Ala Glu Ala Asp Lys Ile Lys Lys Ala Phe Pro Ser Glu

50 55 60

Ser Lys Pro Ser Glu Ser Asn Tyr Ser Ser Val Asp Asn Leu Asn Leu

65 70 75 80

Leu Arg Ala Ile Thr Glu Lys Glu Thr Val Glu Lys Glu Arg Gln Ser

	85		90		95
Ile Arg Ser Pro Pro Phe Asp Asn Gln Leu Asn Val Glu Asp Ala Asp					
	100		105		110
Ser Thr Lys Asn Arg Lys Leu Ile Asp Glu Tyr Asp Ser Thr Lys Ser					
	115		120		125
Gly Leu Asp His Lys Phe Gln Asp Asp Pro Asp Gly Leu His Gln Leu					
	130		135		140
Asp Gly Thr Pro Leu Thr Ala Glu Asp Ile Val His Lys Ile Ala Thr					
	145		150		155
Arg Ile Tyr Glu Glu Asn Asp Arg Gly Val Phe Asp Lys Ile Val Ser					
	165		170		175
Lys Leu Leu Asn Leu Gly Leu Ile Thr Glu Ser Gln Ala His Thr Leu					
	180		185		190
Glu Asp Glu Val Ala Glu Ala Leu Gln Lys Leu Ile Ser Lys Glu Ala					
	195		200		205
Asn Asn Tyr Glu Glu Thr Leu Asp Lys Pro Thr Ser Arg Thr Glu Asn					
	210		215		220
Gln Asp Gly Lys Ile Pro Glu Lys Val Thr Pro Val Ala Ala Val Gln					
	225		230		235
Asp Gly Phe Thr Asn Arg Glu Asn Asp Glu Thr Val Ser Asn Thr Leu					
	245		250		255
Thr Leu Ser Asn Gly Leu Glu Arg Arg Thr Asn Pro His Arg Glu Asp					
	260		265		270
Asp Phe Glu Glu Leu Gln Tyr Phe Pro Asn Phe Tyr Ala Leu Leu Thr					
	275		280		285
Ser Ile Asp Ser Glu Lys Glu Ala Lys Glu Lys Glu Thr Leu Ile Thr					
	290		295		300
Ile Met Lys Thr Leu Ile Asp Phe Val Lys Met Met Val Lys Tyr Gly					
	305		310		315
					320

Thr Ile Ser Pro Glu Glu Gly Val Ser Tyr Leu Glu Asn Leu Asp Glu
 325 330 335
 Thr Ile Ala Leu Gln Thr Lys Asn Lys Leu Glu Lys Asn Thr Thr Asp
 340 345 350
 Ser Lys Ser Lys Leu Phe Pro Ala Pro Pro Glu Lys Ser Gln Glu Glu
 355 360 365
 Thr Asp Ser Thr Lys Glu Glu Ala Ala Lys Met Glu Lys Glu Tyr Gly
 370 375 380
 Ser Leu Lys Asp Ser Thr Lys Asp Asp Asn Ser Asn Leu Gly Gly Lys
 385 390 395 400
 Thr Asp Glu Ala Thr Gly Lys Thr Glu Ala Tyr Leu Glu Ala Ile Arg
 405 410 415
 Lys Asn Ile Glu Trp Leu Lys Lys His Asn Lys Lys Gly Asn Lys Glu
 420 425 430
 Asp Tyr Asp Leu Ser Lys Met Arg Asp Phe Ile Asn Gln Gln Ala Asp
 435 440 445
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 Lys Arg Ile Tyr Ser Ser Leu
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<210> 71

<211> 597

<212> DNA

<213> Mus musculus

<400> 71

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gtaacagagg agaacaagaa ggaatatgia cacctgggtt gccagatgag aatgacagga 180
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 ctcatatcca tctttactga gcaggaattia gagctgctca tctcagggtc gcctaccatc 300
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 atccagtgtt ttggagagc attgcgttcc ttgaccaag cagaccgtgc caagttcctc 420
 cagtttgtca caggtaactc caaggtaacc ctacaaggat ttgctgcctt tgaaggatg 480
 aatggcattc agaagctcga gattcatcga gatgacagat ccacagatcg cctgccttca 540
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<211> 2893

<212> DNA

<213> Mus musculus

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<210> 73

<211> 1690

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (106).. (966)

<400> 73

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Met Ala Asp Leu

1

gag gag cag ttg tcc gat gag gag aag gtt cgt ata gca gca aaa ttc 165

Glu Glu Gln Leu Ser Asp Glu Glu Lys Val Arg Ile Ala Ala Lys Phe

5

10

15

20

atc att cac gcc cct cct gga gaa ttt aat gag gtt ttt aat gat gtt 213

Ile Ile His Ala Pro Pro Gly Glu Phe Asn Glu Val Phe Asn Asp Val

25

30

35

cga cta ttg ctt aat aat gat aat ctt ctc agg gaa gga gcc gca cat 261

Arg Leu Leu Leu Asn Asn Asp Asn Leu Leu Arg Glu Gly Ala Ala His

40	45	50	
gca ttt gca cag tat aac ctg gac cag ttt aca cca gta aaa att gaa			309
Ala Phe Ala Gln Tyr Asn Leu Asp Gln Phe Thr Pro Val Lys Ile Glu			
55	60	65	
ggc tat gaa gat cag gtt ttg ata aca gaa cat gga gac ttg gga aat			357
Gly Tyr Glu Asp Gln Val Leu Ile Thr Glu His Gly Asp Leu Gly Asn			
70	75	80	
gga aaa ttt ttg gat cca aaa aac aga atc tgt ttc aaa ttt gat cat			405
Gly Lys Phe Leu Asp Pro Lys Asn Arg Ile Cys Phe Lys Phe Asp His			
85	90	95	100
tta aga aag gaa gca act gat cca agg ccc tac gaa gca gaa aat gcc			453
Leu Arg Lys Glu Ala Thr Asp Pro Arg Pro Tyr Glu Ala Glu Asn Ala			
105	110	115	
att gaa tcc tgg aga act tca gta gaa act gca ctg cga gct tat gta			501
Ile Glu Ser Trp Arg Thr Ser Val Glu Thr Ala Leu Arg Ala Tyr Val			
120	125	130	
aaa gag cat tat ccg aat ggg gtc tgc act gtg tat ggc aaa aaa gta			549
Lys Glu His Tyr Pro Asn Gly Val Cys Thr Val Tyr Gly Lys Lys Val			
135	140	145	
gat ggg cag caa acc att att gca tgc ata gaa agc cat cag ttt caa			597
Asp Gly Gln Gln Thr Ile Ile Ala Cys Ile Glu Ser His Gln Phe Gln			
150	155	160	
gca aaa aac ttt tgg aat ggt cgt tgg agg tca gag tgg aag ttt aca			645
Ala Lys Asn Phe Trp Asn Gly Arg Trp Arg Ser Glu Trp Lys Phe Thr			
165	170	175	180
gtc act cct tcc acc aca cag gtg gtt ggc att ttg aaa att cag gtt			693
Val Thr Pro Ser Thr Thr Gln Val Val Gly Ile Leu Lys Ile Gln Val			
185	190	195	
cat tat tat gaa gat ggt aat gtt cag cta gtg agt cat aaa gat ata			741

His Tyr Tyr Glu Asp Gly Asn Val Gln Leu Val Ser His Lys Asp Ile
 200 205 210
 caa gat tcc ctc aca gta tct aat gag gtg caa aca gca aaa gaa ttt 789
 Gln Asp Ser Leu Thr Val Ser Asn Glu Val Gln Thr Ala Lys Glu Phe
 215 220 225
 ata aag att gta gaa gct gca gaa aat gaa tac cag act gcc atc agt 837
 Ile Lys Ile Val Glu Ala Ala Glu Asn Glu Tyr Gln Thr Ala Ile Ser
 230 235 240
 gag aat tat cag acg atg tcg gac act acc ttc aaa gcc tta cgt cga 885
 Glu Asn Tyr Gln Thr Met Ser Asp Thr Thr Phe Lys Ala Leu Arg Arg
 245 250 255 260
 cag tlg cca gtg aca cgt act aag atc gac tgg aac aag atc ctt agc 933
 Gln Leu Pro Val Thr Arg Thr Lys Ile Asp Trp Asn Lys Ile Leu Ser
 265 270 275
 tac aag att ggc aaa gag atg cag aat gca taa atgaaaattg catgagcaga 986
 Tyr Lys Ile Gly Lys Glu Met Gln Asn Ala
 280 285
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<210> 74

<211> 286

<212> PRT

<213> Mus musculus

<400> 74

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Phe Asn Asp Val Arg Leu Leu Leu Asn Asn Asp Asn Leu Leu Arg Glu

35 40 45

Gly Ala Ala His Ala Phe Ala Gln Tyr Asn Leu Asp Gln Phe Thr Pro

50 55 60

Val Lys Ile Glu Gly Tyr Glu Asp Gln Val Leu Ile Thr Glu His Gly

65 70 75 80

Asp Leu Gly Asn Gly Lys Phe Leu Asp Pro Lys Asn Arg Ile Cys Phe

85 90 95

Lys Phe Asp His Leu Arg Lys Glu Ala Thr Asp Pro Arg Pro Tyr Glu

100 105 110

Ala Glu Asn Ala Ile Glu Ser Trp Arg Thr Ser Val Glu Thr Ala Leu

115 120 125

Arg Ala Tyr Val Lys Glu His Tyr Pro Asn Gly Val Cys Thr Val Tyr

130 135 140

Gly Lys Lys Val Asp Gly Gln Gln Thr Ile Ile Ala Cys Ile Glu Ser

145 150 155 160

His Gln Phe Gln Ala Lys Asn Phe Trp Asn Gly Arg Trp Arg Ser Glu

165 170 175

Trp Lys Phe Thr Val Thr Pro Ser Thr Thr Gln Val Val Gly Ile Leu
 180 185 190
 Lys Ile Gln Val His Tyr Tyr Glu Asp Gly Asn Val Gln Leu Val Ser
 195 200 205
 His Lys Asp Ile Gln Asp Ser Leu Thr Val Ser Asn Glu Val Gln Thr
 210 215 220
 Ala Lys Glu Phe Ile Lys Ile Val Glu Ala Ala Glu Asn Glu Tyr Gln
 225 230 235 240
 Thr Ala Ile Ser Glu Asn Tyr Gln Thr Met Ser Asp Thr Thr Phe Lys
 245 250 255
 Ala Leu Arg Arg Gln Leu Pro Val Thr Arg Thr Lys Ile Asp Trp Asn
 260 265 270
 Lys Ile Leu Ser Tyr Lys Ile Gly Lys Glu Met Gln Asn Ala
 275 280 285

<210> 75

<211> 328

<212> DNA

<213> Mus musculus

<400> 75

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 ggttgctcag acgactgctc tcccagatga ggatgatgag ctgtgagaca gtgaagctgg 180
 agctctgcgt cagaagtcta gttttatagt caactgtcct gtgatgtcag cagttgagcg 240
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<210> 76

<211> 1654

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (183).. (1604)

<400> 76

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Met Lys Ser Ile Leu Asp Gly Leu Ala Asp Thr Thr Phe Arg Thr
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atc acc aca gac ctc ctc tac gtg ggc tca aat gac att cag tac gaa 275
Ile Thr Thr Asp Leu Leu Tyr Val Gly Ser Asn Asp Ile Gln Tyr Glu
      20             25             30
gat atc aaa gga gac atg gca tcc aaa tta gga tac ttc cca cag aaa 323
Asp Ile Lys Gly Asp Met Ala Ser Lys Leu Gly Tyr Phe Pro Gln Lys
      35             40             45
ttc cct cta act tcc ttc agg ggt agt ccc ttc caa gaa aag atg acg 371
Phe Pro Leu Thr Ser Phe Arg Gly Ser Pro Phe Gln Glu Lys Met Thr
      50             55             60
gca gga gac aac tcc ccg ttg gtt cca gca gga gac aca acc aac att 419
Ala Gly Asp Asn Ser Pro Leu Val Pro Ala Gly Asp Thr Thr Asn Ile
      65             70             75
aca gag ttc tat aac aag tct ctc tca tcg ttc aag gag aac gag gac 467
Thr Glu Phe Tyr Asn Lys Ser Leu Ser Ser Phe Lys Glu Asn Glu Asp

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80	85	90	95	
aac atc cag tgt ggg gag aat ttt atg gac atg gag tgc ttc atg att	515			
Asn Ile Gln Cys Gly Glu Asn Phe Met Asp Met Glu Cys Phe Met Ile				
100	105	110		
ctg aat ccc agc cag cag ctg gcc atc gct gtc ctg tcc ctc acc ctg	563			
Leu Asn Pro Ser Gln Gln Leu Ala Ile Ala Val Leu Ser Leu Thr Leu				
115	120	125		
ggc acc ttc acg gtt ctg gag aac ctg ctg gtg cta tgt gtc atc ctt	611			
Gly Thr Phe Thr Val Leu Glu Asn Leu Leu Val Leu Cys Val Ile Leu				
130	135	140		
cac tcc cgc agt ctc cga tgc agg cct tcc tac cac ttc att ggc agc	659			
His Ser Arg Ser Leu Arg Cys Arg Pro Ser Tyr His Phe Ile Gly Ser				
145	150	155		
ctg gcg gtg gcc gat ctc ctg gga agt gtc atc ttt gtc tac agc ttt	707			
Leu Ala Val Ala Asp Leu Leu Gly Ser Val Ile Phe Val Tyr Ser Phe				
160	165	170	175	
gtt gac ttc cac gtg ttc cac cgc aaa gat agt ccc aat gtg ttt ctg	755			
Val Asp Phe His Val Phe His Arg Lys Asp Ser Pro Asn Val Phe Leu				
180	185	190		
ttc aaa ctg ggt ggg gtt acc gcc tcc ttc aca gca tct gtg ggc agc	803			
Phe Lys Leu Gly Gly Val Thr Ala Ser Phe Thr Ala Ser Val Gly Ser				
195	200	205		
ctg ttc ctc acg gcc atc gac agg tac ata tcc att cac agg cct ctg	851			
Leu Phe Leu Thr Ala Ile Asp Arg Tyr Ile Ser Ile His Arg Pro Leu				
210	215	220		
gcc tat aag agg atc gtc acc agg ccc aag gcc gta gtg gcc ttt tgc	899			
Ala Tyr Lys Arg Ile Val Thr Arg Pro Lys Ala Val Val Ala Phe Cys				
225	230	235		
ttg atg tgg act att gca ata gta att gct gtg ttg cct ctc ctg ggc	947			

Leu Met Trp Thr Ile Ala Ile Val Ile Ala Val Leu Pro Leu Leu Gly
 240 245 250 255
 tgg aac tgc aag aag ctg caa tct gtt tgc tca gac atc ttc cca ctc 995
 Trp Asn Cys Lys Lys Leu Gln Ser Val Cys Ser Asp Ile Phe Pro Leu
 260 265 270
 att gat gaa acc tac ctg atg ttc tgg atc gga gtc acc agt gtg ctg 1043
 Ile Asp Glu Thr Tyr Leu Met Phe Trp Ile Gly Val Thr Ser Val Leu
 275 280 285
 ttg ctg ttc att gtg tat gca tac atg tac att ctc tgg aag gct cac 1091
 Leu Leu Phe Ile Val Tyr Ala Tyr Met Tyr Ile Leu Trp Lys Ala His
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 agc cac gca gtt cgc atg atc cag cgt gga acc cag aaa agc atc atc 1139
 Ser His Ala Val Arg Met Ile Gln Arg Gly Thr Gln Lys Ser Ile Ile
 305 310 315
 att cac acc tca gaa gat ggc aag gtg cag gtg aca cgg cct gac caa 1187
 Ile His Thr Ser Glu Asp Gly Lys Val Gln Val Thr Arg Pro Asp Gln
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 gcc cgc atg gac att agg ctg gcc aaa acc ctg gtt ctg atc ctg gtg 1235
 Ala Arg Met Asp Ile Arg Leu Ala Lys Thr Leu Val Leu Ile Leu Val
 340 345 350
 gtg ttg atc atc tgc tgg ggc cct ctg ctt gcg atc atg gtg tat gat 1283
 Val Leu Ile Ile Cys Trp Gly Pro Leu Leu Ala Ile Met Val Tyr Asp
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 Val Phe Gly Lys Met Asn Lys Leu Ile Lys Thr Val Phe Ala Phe Cys
 370 375 380
 agt atg ctc tgc ctg ctg aac tcc acc gtg aac ccc atc atc tat gct 1379
 Ser Met Leu Cys Leu Leu Asn Ser Thr Val Asn Pro Ile Ile Tyr Ala
 385 390 395

ctg agg agc aag gac ctg aga cat gct ttc cgc agc atg ttc cct tca 1427
 Leu Arg Ser Lys Asp Leu Arg His Ala Phe Arg Ser Met Phe Pro Ser
 400 405 410 415
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 Cys Glu Gly Thr Ala Gln Pro Leu Asp Asn Ser Met Gly Asp Ser Asp
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 Cys Leu His Lys His Ala Asn Asn Thr Ala Ser Met His Arg Ala Ala
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 gaa agc tgc atc aag agc act gtt aag atc gcc aag gtg acc atg tct 1571
 Glu Ser Cys Ile Lys Ser Thr Val Lys Ile Ala Lys Val Thr Met Ser
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 gtg tcc aca gac acg tct gcc gag gct ctg tga gctgctgctt ttgtggctgc 1624
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 35 40 45

Pro Leu Thr Ser Phe Arg Gly Ser Pro Phe Gln Glu Lys Met Thr Ala
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 Gly Asp Asn Ser Pro Leu Val Pro Ala Gly Asp Thr Thr Asn Ile Thr
 65 70 75 80
 Glu Phe Tyr Asn Lys Ser Leu Ser Ser Phe Lys Glu Asn Glu Asp Asn
 85 90 95
 Ile Gln Cys Gly Glu Asn Phe Met Asp Met Glu Cys Phe Met Ile Leu
 100 105 110
 Asn Pro Ser Gln Gln Leu Ala Ile Ala Val Leu Ser Leu Thr Leu Gly
 115 120 125
 Thr Phe Thr Val Leu Glu Asn Leu Leu Val Leu Cys Val Ile Leu His
 130 135 140
 Ser Arg Ser Leu Arg Cys Arg Pro Ser Tyr His Phe Ile Gly Ser Leu
 145 150 155 160
 Ala Val Ala Asp Leu Leu Gly Ser Val Ile Phe Val Tyr Ser Phe Val
 165 170 175
 Asp Phe His Val Phe His Arg Lys Asp Ser Pro Asn Val Phe Leu Phe
 180 185 190
 Lys Leu Gly Gly Val Thr Ala Ser Phe Thr Ala Ser Val Gly Ser Leu
 195 200 205
 Phe Leu Thr Ala Ile Asp Arg Tyr Ile Ser Ile His Arg Pro Leu Ala
 210 215 220
 Tyr Lys Arg Ile Val Thr Arg Pro Lys Ala Val Val Ala Phe Cys Leu
 225 230 235 240
 Met Trp Thr Ile Ala Ile Val Ile Ala Val Leu Pro Leu Leu Gly Trp
 245 250 255
 Asn Cys Lys Lys Leu Gln Ser Val Cys Ser Asp Ile Phe Pro Leu Ile
 260 265 270
 Asp Glu Thr Tyr Leu Met Phe Trp Ile Gly Val Thr Ser Val Leu Leu

275 280 285
 Leu Phe Ile Val Tyr Ala Tyr Met Tyr Ile Leu Trp Lys Ala His Ser
 290 295 300
 His Ala Val Arg Met Ile Gln Arg Gly Thr Gln Lys Ser Ile Ile Ile
 305 310 315 320
 His Thr Ser Glu Asp Gly Lys Val Gln Val Thr Arg Pro Asp Gln Ala
 325 330 335
 Arg Met Asp Ile Arg Leu Ala Lys Thr Leu Val Leu Ile Leu Val Val
 340 345 350
 Leu Ile Ile Cys Trp Gly Pro Leu Leu Ala Ile Met Val Tyr Asp Val
 355 360 365
 Phe Gly Lys Met Asn Lys Leu Ile Lys Thr Val Phe Ala Phe Cys Ser
 370 375 380
 Met Leu Cys Leu Leu Asn Ser Thr Val Asn Pro Ile Ile Tyr Ala Leu
 385 390 395 400
 Arg Ser Lys Asp Leu Arg His Ala Phe Arg Ser Met Phe Pro Ser Cys
 405 410 415
 Glu Gly Thr Ala Gln Pro Leu Asp Asn Ser Met Gly Asp Ser Asp Cys
 420 425 430
 Leu His Lys His Ala Asn Asn Thr Ala Ser Met His Arg Ala Ala Glu
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 Ser Thr Asp Thr Ser Ala Glu Ala Leu
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<210> 78

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Glu Thr Arg Thr Pro Ser Pro Ser Phe Gly Gly Phe Ala Ser Thr Leu
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agt gag gct tct atg cga aac gig gat cca gac act tca gac tgc acc 152
Ser Glu Ala Ser Met Arg Asn Val Asp Pro Asp Thr Ser Asp Cys Thr
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ccc gag aaa gac ctg acg ccc acc caa tgt gta ctt cga gat gtt gtg 200
Pro Glu Lys Asp Leu Thr Pro Thr Gln Cys Val Leu Arg Asp Val Val
          40           45           50

cct ctc ggt ggg cag ggt gga gga gga ccc agc ccc tcc cca ggt gga 248
Pro Leu Gly Gly Gln Gly Gly Gly Gly Pro Ser Pro Ser Pro Gly Gly
          55           60           65

gag cct ccc cca gag cct ttt gcc aat agt gtc ctc cag cta cat gag 296
Glu Pro Pro Pro Glu Pro Phe Ala Asn Ser Val Leu Gln Leu His Glu
          70           75           80           85

cag gat aca ggt ggg cca ggg gga gcc act ggg tca cct gag agt cga 344
Gln Asp Thr Gly Gly Pro Gly Gly Ala Thr Gly Ser Pro Glu Ser Arg
          90           95           100

gca tct aga gtt cga gct gat gag gta cgt ctg cag tgc cag agt ggc 392

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Ala Ser Arg Val Arg Ala Asp Glu Val Arg Leu Gln Cys Gln Ser Gly	
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Ser Gly Phe Leu Glu Gly Leu Phe Gly Cys Leu Arg Pro Val Trp Thr	
120 125 130	
atg att ggc aaa gcc tac tcc aca gaa cac aag caa cag cag gaa gac	488
Met Ile Gly Lys Ala Tyr Ser Thr Glu His Lys Gln Gln Gln Glu Asp	
135 140 145	
ctt tgg gaa gtc ccc ttt gag gaa atc ctg gac ctg cag tgg gta ggc	536
Leu Trp Glu Val Pro Phe Glu Glu Ile Leu Asp Leu Gln Trp Val Gly	
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Ser Gly Ala Gln Gly Ala Val Phe Leu Gly Arg Phe His Gly Glu Glu	
170 175 180	
gta gct gtg aag aag gtt cga gat ctc aag gag act gac atc aag cat	632
Val Ala Val Lys Lys Val Arg Asp Leu Lys Glu Thr Asp Ile Lys His	
185 190 195	
ctt cga aag ctg aag cac ccc aac atc atc act ttc aag ggt gtt tgc	680
Leu Arg Lys Leu Lys His Pro Asn Ile Ile Thr Phe Lys Gly Val Cys	
200 205 210	
aca cag gcc ccc tgc tac tgc atc ctt atg gaa ttc tgc gct caa gga	728
Thr Gln Ala Pro Cys Tyr Cys Ile Leu Met Glu Phe Cys Ala Gln Gly	
215 220 225	
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Gln Leu Tyr Glu Val Leu Arg Ala Gly Arg Pro Val Thr Pro Ser Leu	
230 235 240 245	
ctg gtt gac tgg tcc atg ggc atc gct ggt ggc atg aat tac ctg cac	824
Leu Val Asp Trp Ser Met Gly Ile Ala Gly Gly Met Asn Tyr Leu His	
250 255 260	

ctg cac aag att atc cac aga gac ctg aag tca ccc aac atg cta atc 872
 Leu His Lys Ile Ile His Arg Asp Leu Lys Ser Pro Asn Met Leu Ile
 265 270 275
 aca tac gac gat gtg gtg aag atc tca gat ttt ggc act tcc aag gag 920
 Thr Tyr Asp Asp Val Val Lys Ile Ser Asp Phe Gly Thr Ser Lys Glu
 280 285 290
 ctg agt gac aag agc acc aag atg tcc ttt gca gga aca gta gcc tgg 968
 Leu Ser Asp Lys Ser Thr Lys Met Ser Phe Ala Gly Thr Val Ala Trp
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 atg gct cct gaa gtg atc aga aat gaa cct gtg tct gag aag gtt gac 1016
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 Ile Trp Ser Phe Gly Val Val Leu Trp Glu Leu Leu Thr Gly Glu Ile
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 Pro Tyr Lys Asp Val Asp Ser Ser Ala Ile Ile Trp Gly Val Gly Ser
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 Phe Arg Gln Ile Leu Leu His Leu Asp Ile Ala Ser Ala Asp Val Leu
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 Ser Thr Pro Gln Glu Thr Tyr Phe Lys Ser Gln Ala Glu Trp Arg Glu

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Glu Val Lys Leu His Phe Glu Lys Ile Lys Ser Glu Gly Thr Cys Leu			
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cac cgc cta gaa gag gaa ctg gtg atg cgg aga agg gag gag ctc aga			1400
His Arg Leu Glu Glu Glu Leu Val Met Arg Arg Arg Glu Glu Leu Arg			
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cat gcc ctg gac atc agg gag cac tat gaa cgg aag ttg gag aga gcc			1448
His Ala Leu Asp Ile Arg Glu His Tyr Glu Arg Lys Leu Glu Arg Ala			
455	460	465	
aac aac ctg tac atg gaa ctg aat gcc ctc atg ctg caa cta gaa ctc			1496
Asn Asn Leu Tyr Met Glu Leu Asn Ala Leu Met Leu Gln Leu Glu Leu			
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Lys Glu Arg Glu Leu Leu Arg Arg Asp Glu Ala Leu Glu Arg Arg Cys			
490	495	500	
cct ggt cta cta aag tca cac cct tct cgg ggc ctc cta cat gga gac			1592
Pro Gly Leu Leu Lys Ser His Pro Ser Arg Gly Leu Leu His Gly Asp			
505	510	515	
act atg gag aag ctc atc aag aaa agg aac gtg cca cag aaa ctg tcg			1640
Thr Met Glu Lys Leu Ile Lys Lys Arg Asn Val Pro Gln Lys Leu Ser			
520	525	530	
ccc cac agc aaa agg cca gat att ctc aag aca gag tcg ttg cta cct			1688
Pro His Ser Lys Arg Pro Asp Ile Leu Lys Thr Glu Ser Leu Leu Pro			
535	540	545	
aaa cta gat gca gcc cta agt ggg gtg ggg ctt cct ggg tgt cct aag			1736
Lys Leu Asp Ala Ala Leu Ser Gly Val Gly Leu Pro Gly Cys Pro Lys			
550	555	560	565
ggc ccc cct tca cct gga agg agt cgg cgt ggc aag acc cgt cac cga			1784

Gly Pro Pro Ser Pro Gly Arg Ser Arg Arg Gly Lys Thr Arg His Arg
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 Ala Leu Pro Pro His Glu Pro Gly Gly Leu Gly Ser Pro Gly Gly Leu
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 Gly Val Gly Pro Ser Ala Trp Asp Ala Cys Pro Pro Ala Leu Arg Gly
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 Ala Lys Gly Glu Pro Pro Pro Pro Val Gly Pro Gly Glu Gly Val Gly
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 Leu Leu Gly Thr Gly Arg Glu Gly Thr Ala Gly Arg Gly Gly Asn Arg
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 Glu Val Asp Ser Glu Val Glu Leu Pro Pro Ser Gln Arg Trp Pro Gln
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 Gly Pro Asn Met Arg Gln Ser Leu Ser Thr Phe Ser Ser Glu Asn Pro
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 Ser Asp Val Glu Gly Gly Thr Ala Ser Glu Pro Ser Pro Ser Gly Thr
 790 795 800 805
 cca gaa gtt ggc agt acc aac act gat gag cgg cca gat gaa cga tct 2504
 Pro Glu Val Gly Ser Thr Asn Thr Asp Glu Arg Pro Asp Glu Arg Ser
 810 815 820
 gat gac atg tgc tca cag ggc tca gaa att cca ctg gac cta cct act 2552
 Asp Asp Met Cys Ser Gln Gly Ser Glu Ile Pro Leu Asp Leu Pro Thr
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 840 845 850
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 Gln Asp Gly Gln Gly Pro Asn Pro Glu Asp Ser Asp Cys Asp Ser Thr
 855 860 865
 gaa ttg gac aac tcc aac agc att gat gcc ttg cgg ccc cca gcc tcc 2696
 Glu Leu Asp Asn Ser Asn Ser Ile Asp Ala Leu Arg Pro Pro Ala Ser

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 Leu Pro Pro
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<211> 888

<212> PRT

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<400> 79

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 Leu Arg Asp Val Val Pro Leu Gly Gly Gln Gly Gly Gly Gly Pro Ser

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Leu Gln Leu His Glu Gln Asp Thr Gly Gly Pro Gly Gly Ala Thr Gly			
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Ser Pro Glu Ser Arg Ala Ser Arg Val Arg Ala Asp Glu Val Arg Leu			
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Gln Cys Gln Ser Gly Ser Gly Phe Leu Glu Gly Leu Phe Gly Cys Leu			
	115	120	125
Arg Pro Val Trp Thr Met Ile Gly Lys Ala Tyr Ser Thr Glu His Lys			
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Gln Gln Gln Glu Asp Leu Trp Glu Val Pro Phe Glu Glu Ile Leu Asp			
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Leu Gln Trp Val Gly Ser Gly Ala Gln Gly Ala Val Phe Leu Gly Arg			
	165	170	175
Phe His Gly Glu Glu Val Ala Val Lys Lys Val Arg Asp Leu Lys Glu			
	180	185	190
Thr Asp Ile Lys His Leu Arg Lys Leu Lys His Pro Asn Ile Ile Thr			
	195	200	205
Phe Lys Gly Val Cys Thr Gln Ala Pro Cys Tyr Cys Ile Leu Met Glu			
	210	215	220
Phe Cys Ala Gln Gly Gln Leu Tyr Glu Val Leu Arg Ala Gly Arg Pro			
225	230	235	240
Val Thr Pro Ser Leu Leu Val Asp Trp Ser Met Gly Ile Ala Gly Gly			
	245	250	255
Met Asn Tyr Leu His Leu His Lys Ile Ile His Arg Asp Leu Lys Ser			
	260	265	270
Pro Asn Met Leu Ile Thr Tyr Asp Asp Val Val Lys Ile Ser Asp Phe			
	275	280	285

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 Pro Asp Gly Phe Lys Ile Leu Leu Arg Gln Cys Trp Asn Thr Lys Pro
 370 375 380
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 Lys Leu Glu Arg Ala Asn Asn Leu Tyr Met Glu Leu Asn Ala Leu Met
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Glu Ser Leu Leu Pro Lys Leu Asp Ala Ala Leu Ser Gly Val Gly Leu		
545	550	555
Pro Gly Cys Pro Lys Gly Pro Pro Ser Pro Gly Arg Ser Arg Arg Gly		
565	570	575
Lys Thr Arg His Arg Lys Ala Ser Ala Lys Gly Ser Cys Gly Asp Leu		
580	585	590
Pro Gly Leu Arg Ala Ala Leu Pro Pro His Glu Pro Gly Gly Leu Gly		
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Ser Pro Gly Gly Leu Gly Val Gly Pro Ser Ala Trp Asp Ala Cys Pro		
610	615	620
Pro Ala Leu Arg Gly Leu His His Asp Leu Leu Leu Arg Lys Met Ser		
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Ser Ser Ser Pro Asp Leu Leu Ser Ala Ala Leu Gly Ala Arg Gly Arg		
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Gly Ala Thr Gly Gly Ala Arg Asp Pro Gly Ser Pro Pro Pro Pro Gln		
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Gly Asp Thr Pro Pro Ser Glu Gly Ser Ala Pro Gly Ser Thr Ser Pro		
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Asp Ser Pro Gly Gly Ala Lys Gly Glu Pro Pro Pro Pro Val Gly Pro		
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Gly Glu Gly Val Gly Leu Leu Gly Thr Gly Arg Glu Gly Thr Ala Gly		
705	710	715
Arg Gly Gly Asn Arg Ala Gly Ser Gln His Leu Thr Pro Ala Ala Leu		
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Leu Tyr Arg Ala Ala Val Thr Arg Ser Gln Lys Arg Gly Ile Ser Ser		
740	745	750

Glu Glu Glu Glu Gly Glu Val Asp Ser Glu Val Glu Leu Pro Pro Ser
 755 760 765
 Gln Arg Trp Pro Gln Gly Pro Asn Met Arg Gln Ser Leu Ser Thr Phe
 770 775 780
 Ser Ser Glu Asn Pro Ser Asp Val Glu Gly Gly Thr Ala Ser Glu Pro
 785 790 795 800
 Ser Pro Ser Gly Thr Pro Glu Val Gly Ser Thr Asn Thr Asp Glu Arg
 805 810 815
 Pro Asp Glu Arg Ser Asp Asp Met Cys Ser Gln Gly Ser Glu Ile Pro
 820 825 830
 Leu Asp Leu Pro Thr Ser Glu Val Val Pro Glu Arg Glu Ala Ser Ser
 835 840 845
 Leu Pro Met Gln His Gln Asp Gly Gln Gly Pro Asn Pro Glu Asp Ser
 850 855 860
 Asp Cys Asp Ser Thr Glu Leu Asp Asn Ser Asn Ser Ile Asp Ala Leu
 865 870 875 880
 Arg Pro Pro Ala Ser Leu Pro Pro
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<210> 80

<211> 1904

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (596).. (1636)

<400> 80

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 tgttcaagta cttgtagggtg cagcciggtt ccccgatgag gatgcgagac actgggggtga 180
 gcacatcttt gccttggatc ctcaccacgt cccgaaacaa gcagccaatgc ttatcgagt 240
 tgagaaaggc ctcgggcacc tccttatgca gctcctctgg tatgctgccg gcctctcgga 300
 aaaccagttt agggatattc agctgccact gctgatagaa ctcacatct tigggtgtca 360
 ggtaaggaag ctgggagccc cgggagccac tgctgagcgc caaacacccg ctaagcctgc 420
 tgtgtctctg gacgcccagc tgggtaaaag aacagcttct ggggtgctaga gaacacaggg 480
 aagcgagtgc tcgaggaaaa ccaagatgtc acagtagact ctggccccc agagccctgt 540
 gaggcgagag gaagatctct aggcagcttg gtcttagacg gattggaaag cagcc atg 598

Met

1

gag atg agc tct gag cag ttg aat ggg agc caa gta tgg gtg tcc tct 646
 Glu Met Ser Ser Glu Gln Leu Asn Gly Ser Gln Val Trp Val Ser Ser

5

10

15

cca ttt gac ctc aac ggt tca ctg ggg cca agc aat ggc tcc aac cag 694
 Pro Phe Asp Leu Asn Gly Ser Leu Gly Pro Ser Asn Gly Ser Asn Gln

20

25

30

acc gag cca tac tac gac atg aca agc aac gcc gtc ctc acg ttc atc 742
 Thr Glu Pro Tyr Tyr Asp Met Thr Ser Asn Ala Val Leu Thr Phe Ile

35

40

45

tac ttc gtg gtg tgc gtc gtc ggg ctg tgc ggc aac acg ctg gtc att 790
 Tyr Phe Val Val Cys Val Val Gly Leu Cys Gly Asn Thr Leu Val Ile

50

55

60

65

tac gtc atc ctc cgc tac gcc aag atg aag acc atc acc aac atc tac 838
 Tyr Val Ile Leu Arg Tyr Ala Lys Met Lys Thr Ile Thr Asn Ile Tyr

70

75

80

atc ctt aac ctg gcc att gca gat gaa ctc ttc atg cta ggg ctg ccc 886
 Ile Leu Asn Leu Ala Ile Ala Asp Glu Leu Phe Met Leu Gly Leu Pro

85	90	95	
ttc ttg gcc atg cag gtg gcg cta gtc cac tgg cct ttt ggc aag gcc	934		
Phe Leu Ala Met Gln Val Ala Leu Val His Trp Pro Phe Gly Lys Ala			
100	105	110	
atc tgc cgg gtg gtc atg act gta gat ggc atc aat cag ttc acc agt	982		
Ile Cys Arg Val Val Met Thr Val Asp Gly Ile Asn Gln Phe Thr Ser			
115	120	125	
atc ttc tgc ttg acg gtc atg agc atc gac cgc tac ctg gcc gtg gtg	1030		
Ile Phe Cys Leu Thr Val Met Ser Ile Asp Arg Tyr Leu Ala Val Val			
130	135	140	145
cac ccc att aag tca gcc aaa tgg agg cga ccc cgg aca gcc aag atg	1078		
His Pro Ile Lys Ser Ala Lys Trp Arg Arg Pro Arg Thr Ala Lys Met			
150	155	160	
atc aat gtg gct gtg tgg tgt gtg tct ctg ctc gtc att ttg ccc atc	1126		
Ile Asn Val Ala Val Trp Cys Val Ser Leu Leu Val Ile Leu Pro Ile			
165	170	175	
atg tta tac gcc ggc ctc cgg agc aac cag tgg ggc aga agc agc tgt	1174		
Met Leu Tyr Ala Gly Leu Arg Ser Asn Gln Trp Gly Arg Ser Ser Cys			
180	185	190	
acc atc aac tgg cca ggc gaa tcc ggg gcg tgg tac aca ggt ttc att	1222		
Thr Ile Asn Trp Pro Gly Glu Ser Gly Ala Trp Tyr Thr Gly Phe Ile			
195	200	205	
atc tac gcc ttc atc ctg ggg ttc ctg gta ccc ctt acc atc att tgt	1270		
Ile Tyr Ala Phe Ile Leu Gly Phe Leu Val Pro Leu Thr Ile Ile Cys			
210	215	220	225
ctc tgc tac ctg ttc atc atc atc aag gtg aag tcc tct gga atc cga	1318		
Leu Cys Tyr Leu Phe Ile Ile Ile Lys Val Lys Ser Ser Gly Ile Arg			
230	235	240	
gtg gga tca tcc aag agg aaa aag tca gag aaa aag gtg acc cgc atg	1366		

Val Gly Ser Ser Lys Arg Lys Lys Ser Glu Lys Lys Val Thr Arg Met
 245 250 255
 gtg tcc atc gta gtg gct gtc ttc atc ttc tgc tgg ctc cct ttc tac 1414
 Val Ser Ile Val Val Ala Val Phe Ile Phe Cys Trp Leu Pro Phe Tyr
 260 265 270
 atc ttc aac gtc tct tcc gtg tct gtg gcc atc agt ccc acc cca gcc 1462
 Ile Phe Asn Val Ser Ser Val Ser Val Ala Ile Ser Pro Thr Pro Ala
 275 280 285
 ctg aaa gga atg ttt gac ttt gtg gtg atc ctc acc tat gcc aac acg 1510
 Leu Lys Gly Met Phe Asp Phe Val Val Ile Leu Thr Tyr Ala Asn Thr
 290 295 300 305
 tgc gcc aac ccc atc ctg tac gcc ttc ttg tct gac aac ttc aag aag 1558
 Cys Ala Asn Pro Ile Leu Tyr Ala Phe Leu Ser Asp Asn Phe Lys Lys
 310 315 320
 agc ttc cag aat gtt ctt tgc ttg gtc aag gca gac aat tca caa tcc 1606
 Ser Phe Gln Asn Val Leu Cys Leu Val Lys Ala Asp Asn Ser Gln Ser
 325 330 335
 gga gcg gaa gac atc att gcc tgg gtg tga cctgggtggaa aacagctgcc 1656
 Gly Ala Glu Asp Ile Ile Ala Trp Val
 340 345
 cggcagaaac cggaaaaacc aaaactaaat caaagtcctg tgtgtatgtg tgctaacacg 1716
 ttacgtaaat ctgtgatct gatatttaca ttigtatatt ctccctccc cggtcacaca 1776
 aacatgtccc gtgtttgtaa gccaagtag ctagttcgtg tgcgtctagt ataggtggac 1836
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<210> 81

<211> 346

<212> PRT

<213> Mus musculus

<400> 81

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 Gln Thr Glu Pro Tyr Tyr Asp Met Thr Ser Asn Ala Val Leu Thr Phe
 35 40 45
 Ile Tyr Phe Val Val Cys Val Val Gly Leu Cys Gly Asn Thr Leu Val
 50 55 60
 Ile Tyr Val Ile Leu Arg Tyr Ala Lys Met Lys Thr Ile Thr Asn Ile
 65 70 75 80
 Tyr Ile Leu Asn Leu Ala Ile Ala Asp Glu Leu Phe Met Leu Gly Leu
 85 90 95
 Pro Phe Leu Ala Met Gln Val Ala Leu Val His Trp Pro Phe Gly Lys
 100 105 110
 Ala Ile Cys Arg Val Val Met Thr Val Asp Gly Ile Asn Gln Phe Thr
 115 120 125
 Ser Ile Phe Cys Leu Thr Val Met Ser Ile Asp Arg Tyr Leu Ala Val
 130 135 140
 Val His Pro Ile Lys Ser Ala Lys Trp Arg Arg Pro Arg Thr Ala Lys
 145 150 155 160
 Met Ile Asn Val Ala Val Trp Cys Val Ser Leu Leu Val Ile Leu Pro
 165 170 175
 Ile Met Leu Tyr Ala Gly Leu Arg Ser Asn Gln Trp Gly Arg Ser Ser
 180 185 190
 Cys Thr Ile Asn Trp Pro Gly Glu Ser Gly Ala Trp Tyr Thr Gly Phe
 195 200 205

Ile Ile Tyr Ala Phe Ile Leu Gly Phe Leu Val Pro Leu Thr Ile Ile
 210 215 220
 Cys Leu Cys Tyr Leu Phe Ile Ile Ile Lys Val Lys Ser Ser Gly Ile
 225 230 235 240
 Arg Val Gly Ser Ser Lys Arg Lys Lys Ser Glu Lys Lys Val Thr Arg
 245 250 255
 Met Val Ser Ile Val Val Ala Val Phe Ile Phe Cys Trp Leu Pro Phe
 260 265 270
 Tyr Ile Phe Asn Val Ser Ser Val Ser Val Ala Ile Ser Pro Thr Pro
 275 280 285
 Ala Leu Lys Gly Met Phe Asp Phe Val Val Ile Leu Thr Tyr Ala Asn
 290 295 300
 Thr Cys Ala Asn Pro Ile Leu Tyr Ala Phe Leu Ser Asp Asn Phe Lys
 305 310 315 320
 Lys Ser Phe Gln Asn Val Leu Cys Leu Val Lys Ala Asp Asn Ser Gln
 325 330 335
 Ser Gly Ala Glu Asp Ile Ile Ala Trp Val
 340 345

<210> 82

<211> 666

<212> DNA

<213> Mus musculus

<400> 82

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 ttccaattta tgcagacaag gatgtgttcc acatggtggt tgaggttcca cgctgggtcca 180
 acgccccaaat ggagattgct acaaaggacc ctttaaacc aatcaagcaa gatgtgaaaa 240

aggggaagct ccgctatgtg gcgaatctgt tccctataaa agggatatt tggaactacg 300
 gcgccatccc tcagacatgg gaaganccag gacacagtga caagcacact ggctgctgtg 360
 gtgacaacga cccaatcgga tgttgtgaaa tcggaagcaa gtgtgtgcca gagtgagata 420
 atcaggtga aagtcctggg catactggcc atgacgatt gaggcgaaaa cgacctgaag 480
 ggcaatggcc attaaatggg acgacccgga cggcgccatt aataaggata ttccgatgtc 540
 gaccgcctaa aaccgggcta tttagagcta actgtggatt ggtaagagg gaataagttc 600
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<210> 83

<211> 3283

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (182).. (2803)

<400> 83

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 ttgttgtgcg gacgaacggc gacaacgacg gcgcgacgga ggcaccatcc gggcgggcag 180
 c atg ggc acg tcc gcg cgc tgg gcg ctg tgg ctg ctg ctc gcg ctg tgc 229
 Met Gly Thr Ser Ala Arg Trp Ala Leu Trp Leu Leu Leu Ala Leu Cys
 1 5 10 15
 tgg gcg ccc cgg gac agc ggc gcc act gca agc ggg aag aaa gcc aaa 277
 Trp Ala Pro Arg Asp Ser Gly Ala Thr Ala Ser Gly Lys Lys Ala Lys
 20 25 30
 tgt gat agc tcc cag ttt cag tgc aca aat ggc cgc tgc att acc ctg 325

Cys	Asp	Ser	Ser	Gln	Phe	Gln	Cys	Thr	Asn	Gly	Arg	Cys	Ile	Thr	Leu	
		35					40					45				
ctg	tgg	aaa	tgt	gat	gga	gat	gaa	gac	tgt	gcg	gat	ggc	agc	gac	gag	373
Leu	Trp	Lys	Cys	Asp	Gly	Asp	Glu	Asp	Cys	Ala	Asp	Gly	Ser	Asp	Glu	
		50					55					60				
aag	aac	tgt	gta	aag	aag	acg	tgt	gct	gag	tct	gac	ttc	gtg	tgc	aaa	421
Lys	Asn	Cys	Val	Lys	Lys	Thr	Cys	Ala	Glu	Ser	Asp	Phe	Val	Cys	Lys	
	65					70					75				80	
aac	ggc	cag	tgt	gtt	cct	aac	aga	tgg	cag	tgt	gac	ggg	gat	cct	gat	469
Asn	Gly	Gln	Cys	Val	Pro	Asn	Arg	Trp	Gln	Cys	Asp	Gly	Asp	Pro	Asp	
				85					90					95		
tgc	gaa	gac	ggt	tct	gat	gaa	agc	cct	gaa	cag	tgc	cat	atg	aga	aca	517
Cys	Glu	Asp	Gly	Ser	Asp	Glu	Ser	Pro	Glu	Gln	Cys	His	Met	Arg	Thr	
			100						105					110		
tgc	cgc	ata	aat	gaa	atc	agc	tgt	ggc	gcc	cgt	tct	act	cag	tgt	atc	565
Cys	Arg	Ile	Asn	Glu	Ile	Ser	Cys	Gly	Ala	Arg	Ser	Thr	Gln	Cys	Ile	
		115					120					125				
ccc	gtg	tcc	tgg	aga	tgc	gat	ggt	gaa	aat	gat	tgt	gac	aat	gga	gaa	613
Pro	Val	Ser	Trp	Arg	Cys	Asp	Gly	Glu	Asn	Asp	Cys	Asp	Asn	Gly	Glu	
		130					135					140				
gat	gaa	gaa	aac	tgt	ggc	aac	ata	aca	tgt	agt	gca	gat	gag	ttc	act	661
Asp	Glu	Glu	Asn	Cys	Gly	Asn	Ile	Thr	Cys	Ser	Ala	Asp	Glu	Phe	Thr	
	145				150					155				160		
tgc	tcc	agt	ggc	cgc	tgc	gtc	tcc	aga	aac	ttt	gtg	tgc	aat	ggc	cag	709
Cys	Ser	Ser	Gly	Arg	Cys	Val	Ser	Arg	Asn	Phe	Val	Cys	Asn	Gly	Gln	
			165						170					175		
gat	gac	tgt	gac	gat	ggc	agt	gat	gag	ctg	gac	tgt	gct	cca	cca	acc	757
Asp	Asp	Cys	Asp	Asp	Gly	Ser	Asp	Glu	Leu	Asp	Cys	Ala	Pro	Pro	Thr	
		180							185					190		

tgc gga gcc cac gag ttc cag tgc agc acc tct tcc tgc att ccc ctc	805
Cys Gly Ala His Glu Phe Gln Cys Ser Thr Ser Ser Cys Ile Pro Leu	
195 200 205	
agc tgg gtg tgt gat gat gac gca gac tgt tca gac caa tca gac gag	853
Ser Trp Val Cys Asp Asp Asp Ala Asp Cys Ser Asp Gln Ser Asp Glu	
210 215 220	
tct ctt gag cag tgt ggc cgt cag cct gtg ata cat acc aaa tgt cct	901
Ser Leu Glu Gln Cys Gly Arg Gln Pro Val Ile His Thr Lys Cys Pro	
225 230 235 240	
acc agt gag atc cag tgt ggc tct ggc gag tgc att cac aaa aaa tgg	949
Thr Ser Glu Ile Gln Cys Gly Ser Gly Glu Cys Ile His Lys Lys Trp	
245 250 255	
cgg tgt gac gga gac cct gac tgc aag gac ggc agc gat gag gtc aac	997
Arg Cys Asp Gly Asp Pro Asp Cys Lys Asp Gly Ser Asp Glu Val Asn	
260 265 270	
tgc cct tct cga acc tgc cga cct gac cag ttt gaa tgt gaa gat ggt	1045
Cys Pro Ser Arg Thr Cys Arg Pro Asp Gln Phe Glu Cys Glu Asp Gly	
275 280 285	
agc tgt atc cac ggc agc agg caa tgc aat ggc atc cga gac tgt gtt	1093
Ser Cys Ile His Gly Ser Arg Gln Ser Asn Gly Ile Arg Asp Cys Val	
290 295 300	
gat ggc tct gat gaa gtc aac tgc aaa aac gtc aat cag tgc ctg ggc	1141
Asp Gly Ser Asp Glu Val Asn Cys Lys Asn Val Asn Gln Cys Leu Gly	
305 310 315 320	
cct gga aag ttc aag tgc aga agc ggg gaa tgc ata gac atg agc aaa	1189
Pro Gly Lys Phe Lys Cys Arg Ser Gly Glu Cys Ile Asp Met Ser Lys	
325 330 335	
gta tgt gac cag gaa caa gac tgc aga gac tgg agt gac gag ccc ctg	1237
Val Cys Asp Gln Glu Gln Asp Cys Arg Asp Trp Ser Asp Glu Pro Leu	

340	345	350	
aag gaa tgc cat atc aac gaa tgc ctg gtc aat aat gga ggc tgt tcc			1285
Lys Glu Cys His Ile Asn Glu Cys Leu Val Asn Asn Gly Gly Cys Ser			
355	360	365	
cat atc tgc aaa gac cta gtt ata ggt tat gag tgt gat tgt gca gct			1333
His Ile Cys Lys Asp Leu Val Ile Gly Tyr Glu Cys Asp Cys Ala Ala			
370	375	380	
ggg ttt gaa ctg ata gat agg aaa acc tgt gga gat att gat gaa tgc			1381
Gly Phe Glu Leu Ile Asp Arg Lys Thr Cys Gly Asp Ile Asp Glu Cys			
385	390	395	400
caa aac ccg ggg atc tgc agt caa att tgt atc aac tta aaa ggc ggt			1429
Gln Asn Pro Gly Ile Cys Ser Gln Ile Cys Ile Asn Leu Lys Gly Gly			
405	410	415	
tac aag tgt gaa tgt agt cgt ggc tat caa atg gat ctt gcc act ggc			1477
Tyr Lys Cys Glu Cys Ser Arg Gly Tyr Gln Met Asp Leu Ala Thr Gly			
420	425	430	
gtg tgc aag gca gta ggc aaa gag ccg agt ctg atc ttc act aat cga			1525
Val Cys Lys Ala Val Gly Lys Glu Pro Ser Leu Ile Phe Thr Asn Arg			
435	440	445	
aga gac atc agg aag att ggc cta gag aga aag gaa tac atc caa ctt			1573
Arg Asp Ile Arg Lys Ile Gly Leu Glu Arg Lys Glu Tyr Ile Gln Leu			
450	455	460	
gta gag caa cta agg aac acg gtg gct ctc gat gcg gac att gca gct			1621
Val Glu Gln Leu Arg Asn Thr Val Ala Leu Asp Ala Asp Ile Ala Ala			
465	470	475	480
cag aag ctg ttt tgg gct gat ctc agc cag aag gcc atc ttc agt gcc			1669
Gln Lys Leu Phe Trp Ala Asp Leu Ser Gln Lys Ala Ile Phe Ser Ala			
485	490	495	
tca att gat gac aag gtt ggt aga cat ttt aaa atg atc gac aat gtc			1717

Ser Ile Asp Asp Lys Val Gly Arg His Phe Lys Met Ile Asp Asn Val
 500 505 510
 tat aat cct gca gcc att gct gtt gat tgg gtg tac aag acc atc tac 1765
 Tyr Asn Pro Ala Ala Ile Ala Val Asp Trp Val Tyr Lys Thr Ile Tyr
 515 520 525
 tgg act gat gcg gct tct aag act att tca gta gct acc cta gac gga 1813
 Trp Thr Asp Ala Ala Ser Lys Thr Ile Ser Val Ala Thr Leu Asp Gly
 530 535 540
 gcc aag agg aag ttc ctg ttt aat tct gac ttg cga gag cct gcc tcc 1861
 Ala Lys Arg Lys Phe Leu Phe Asn Ser Asp Leu Arg Glu Pro Ala Ser
 545 550 555 560
 ata gct gtg gat ccg ttg tcg ggc ttt gtt tac tgg tca gac tgg ggc 1909
 Ile Ala Val Asp Pro Leu Ser Gly Phe Val Tyr Trp Ser Asp Trp Gly
 565 570 575
 gag cca gct aaa ata gaa aaa gca gga atg aat gga ttt gat aga cgt 1957
 Glu Pro Ala Lys Ile Glu Lys Ala Gly Met Asn Gly Phe Asp Arg Arg
 580 585 590
 cct ctg gtg acg gag gac atc caa tgg cct aat gga att aca ctc gac 2005
 Pro Leu Val Thr Glu Asp Ile Gln Trp Pro Asn Gly Ile Thr Leu Asp
 595 600 605
 ctt gtc aaa agc cgc ctc tac tgg ctg gat tcc aag ttg cac atg ctc 2053
 Leu Val Lys Ser Arg Leu Tyr Trp Leu Asp Ser Lys Leu His Met Leu
 610 615 620
 tct agc gtg gac ctg aat ggt caa gat cgt agg ata gtg ctc aag tct 2101
 Ser Ser Val Asp Leu Asn Gly Gln Asp Arg Arg Ile Val Leu Lys Ser
 625 630 635 640
 ctg gag ttc cta gct cat cct ctt gca ctc acc ata ttt gag gat cgc 2149
 Leu Glu Phe Leu Ala His Pro Leu Ala Leu Thr Ile Phe Glu Asp Arg
 645 650 655

gtc tac tgg ata gat gga gaa aat gaa gca gtg tac ggt gcc aat aaa	2197
Val Tyr Trp Ile Asp Gly Glu Asn Glu Ala Val Tyr Gly Ala Asn Lys	
660 665 670	
ttc act ggg tca gag ctg gcc act cta gtg aat aat ctc aat gat gcc	2245
Phe Thr Gly Ser Glu Leu Ala Thr Leu Val Asn Asn Leu Asn Asp Ala	
675 680 685	
caa gac atc att gtc tac cat gaa ctc gtc cag ccg tca ggt aaa aac	2293
Gln Asp Ile Ile Val Tyr His Glu Leu Val Gln Pro Ser Gly Lys Asn	
690 695 700	
tgg tgt gaa gac gat atg gag aat gga gga tgt gaa tat ctc tgc ctg	2341
Trp Cys Glu Asp Asp Met Glu Asn Gly Gly Cys Glu Tyr Leu Cys Leu	
705 710 715 720	
cca gca cca cag atc aat gac cac tct cca aaa tat acc tgt tcc tgt	2389
Pro Ala Pro Gln Ile Asn Asp His Ser Pro Lys Tyr Thr Cys Ser Cys	
725 730 735	
ccc aat ggg tac aat ctc gaa gaa aat gga cga gag tgt caa agt act	2437
Pro Asn Gly Tyr Asn Leu Glu Glu Asn Gly Arg Glu Cys Gln Ser Thr	
740 745 750	
tca act cct gtg act tac agt gag aca aaa gat atc aac aca aca gac	2485
Ser Thr Pro Val Thr Tyr Ser Glu Thr Lys Asp Ile Asn Thr Thr Asp	
755 760 765	
att cta cga act agt gga ctg gtt cct gga ggg atc aat gtg acc aca	2533
Ile Leu Arg Thr Ser Gly Leu Val Pro Gly Gly Ile Asn Val Thr Thr	
770 775 780	
gca gta tca gaa gtc agt gtt ccc cca aaa ggg acg tca gct gcc tgg	2581
Ala Val Ser Glu Val Ser Val Pro Pro Lys Gly Thr Ser Ala Ala Trp	
785 790 795 800	
gcc atc ctt cct ctc ttg ctc tta gtg atg gca gca gta ggt ggc tac	2629
Ala Ile Leu Pro Leu Leu Leu Leu Val Met Ala Ala Val Gly Gly Tyr	

805	810	815	
ttg atg tgg agg aat tgg caa cat aaa aac atg aaa agc atg aac ttt			2677
Leu Met Trp Arg Asn Trp Gln His Lys Asn Met Lys Ser Met Asn Phe			
820	825	830	
gac aat cct gtg tac ttg aag acc act gaa gag gac ctg tcg ata gac			2725
Asp Asn Pro Val Tyr Leu Lys Thr Thr Glu Glu Asp Leu Ser Ile Asp			
835	840	845	
att ggt aga cac agc gct tct gta gga cac aca tac cca gca ata tca			2773
Ile Gly Arg His Ser Ala Ser Val Gly His Thr Tyr Pro Ala Ile Ser			
850	855	860	
gtt gta agc aca gat gat gat ctg gct tga gtctgaaca aatcttggtc			2823
Val Val Ser Thr Asp Asp Asp Leu Ala			
865	870		
tatgaggtct acaccaataa caccctactc tggaatggta acagagccag cgctgaagtc			2883
tcctttcttc ctcccatctg gaagaacatc aagatatctt tttgtggatc aagtttgagt			2943
acttgatcat ttttatatta cttttgtaaa tattcttggc cacattctac ttcagctctg			3003
gatgtggtaa ccaagtatct glaacccttg agcccctaga cagtattgcc atctctggcc			3063
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ccacctgtac atacattgta taggccacct gtacatatcc cagagaacaa tcactattct			3183
taagcacitt gtgatattt ctatgtaaatt tattgtaaac tttttcaatg gtggggacaa			3243
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<210> 84

<211> 873

<212> PRT

<213> Mus musculus

<400> 84

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	20	25	30												
Cys	Asp	Ser	Ser	Gln	Phe	Gln	Cys	Thr	Asn	Gly	Arg	Cys	Ile	Thr	Leu
	35	40	45												
Leu	Trp	Lys	Cys	Asp	Gly	Asp	Glu	Asp	Cys	Ala	Asp	Gly	Ser	Asp	Glu
	50	55	60												
Lys	Asn	Cys	Val	Lys	Lys	Thr	Cys	Ala	Glu	Ser	Asp	Phe	Val	Cys	Lys
65	70	75	80												
Asn	Gly	Gln	Cys	Val	Pro	Asn	Arg	Trp	Gln	Cys	Asp	Gly	Asp	Pro	Asp
	85	90	95												
Cys	Glu	Asp	Gly	Ser	Asp	Glu	Ser	Pro	Glu	Gln	Cys	His	Met	Arg	Thr
	100	105	110												
Cys	Arg	Ile	Asn	Glu	Ile	Ser	Cys	Gly	Ala	Arg	Ser	Thr	Gln	Cys	Ile
	115	120	125												
Pro	Val	Ser	Trp	Arg	Cys	Asp	Gly	Glu	Asn	Asp	Cys	Asp	Asn	Gly	Glu
	130	135	140												
Asp	Glu	Glu	Asn	Cys	Gly	Asn	Ile	Thr	Cys	Ser	Ala	Asp	Glu	Phe	Thr
145	150	155	160												
Cys	Ser	Ser	Gly	Arg	Cys	Val	Ser	Arg	Asn	Phe	Val	Cys	Asn	Gly	Gln
	165	170	175												
Asp	Asp	Cys	Asp	Asp	Gly	Ser	Asp	Glu	Leu	Asp	Cys	Ala	Pro	Pro	Thr
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Cys	Gly	Ala	His	Glu	Phe	Gln	Cys	Ser	Thr	Ser	Ser	Cys	Ile	Pro	Leu
	195	200	205												
Ser	Trp	Val	Cys	Asp	Asp	Asp	Ala	Asp	Cys	Ser	Asp	Gln	Ser	Asp	Glu
	210	215	220												
Ser	Leu	Glu	Gln	Cys	Gly	Arg	Gln	Pro	Val	Ile	His	Thr	Lys	Cys	Pro
225	230	235	240												

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 Arg Cys Asp Gly Asp Pro Asp Cys Lys Asp Gly Ser Asp Glu Val Asn
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 Cys Pro Ser Arg Thr Cys Arg Pro Asp Gln Phe Glu Cys Glu Asp Gly
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 Ser Cys Ile His Gly Ser Arg Gln Ser Asn Gly Ile Arg Asp Cys Val
 290 295 300
 Asp Gly Ser Asp Glu Val Asn Cys Lys Asn Val Asn Gln Cys Leu Gly
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 Pro Gly Lys Phe Lys Cys Arg Ser Gly Glu Cys Ile Asp Met Ser Lys
 325 330 335
 Val Cys Asp Gln Glu Gln Asp Cys Arg Asp Trp Ser Asp Glu Pro Leu
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 Lys Glu Cys His Ile Asn Glu Cys Leu Val Asn Asn Gly Gly Cys Ser
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 His Ile Cys Lys Asp Leu Val Ile Gly Tyr Glu Cys Asp Cys Ala Ala
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 Gly Phe Glu Leu Ile Asp Arg Lys Thr Cys Gly Asp Ile Asp Glu Cys
 385 390 395 400
 Gln Asn Pro Gly Ile Cys Ser Gln Ile Cys Ile Asn Leu Lys Gly Gly
 405 410 415
 Tyr Lys Cys Glu Cys Ser Arg Gly Tyr Gln Met Asp Leu Ala Thr Gly
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 Val Cys Lys Ala Val Gly Lys Glu Pro Ser Leu Ile Phe Thr Asn Arg
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Tyr Asn Pro Ala Ala	Ile Ala Val Asp Trp	Val Tyr Lys Thr	Ile Tyr
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Trp Thr Asp Ala Ala	Ser Lys Thr Ile Ser	Val Ala Thr Leu	Asp Gly
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545	550	555	560
Ile Ala Val Asp Pro	Leu Ser Gly Phe Val	Tyr Trp Ser Asp	Trp Gly
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Glu Pro Ala Lys Ile	Glu Lys Ala Gly Met	Asn Gly Phe Asp	Arg Arg
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Pro Leu Val Thr Glu	Asp Ile Gln Trp Pro	Asn Gly Ile Thr	Leu Asp
595	600	605	
Leu Val Lys Ser Arg	Leu Tyr Trp Leu Asp	Ser Lys Leu His	Met Leu
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Ser Ser Val Asp Leu	Asn Gly Gln Asp Arg	Arg Ile Val Leu	Lys Ser
625	630	635	640
Leu Glu Phe Leu Ala	His Pro Leu Ala Leu	Thr Ile Phe Glu	Asp Arg
645	650	655	
Val Tyr Trp Ile Asp	Gly Glu Asn Glu Ala	Val Tyr Gly Ala	Asn Lys
660	665	670	
Phe Thr Gly Ser Glu	Leu Ala Thr Leu Val	Asn Asn Leu Asn	Asp Ala
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Gln Asp Ile Ile Val	Tyr His Glu Leu Val	Gln Pro Ser Gly	Lys Asn
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 Pro Ala Pro Gln Ile Asn Asp His Ser Pro Lys Tyr Thr Cys Ser Cys
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 Pro Asn Gly Tyr Asn Leu Glu Glu Asn Gly Arg Glu Cys Gln Ser Thr
 740 745 750
 Ser Thr Pro Val Thr Tyr Ser Glu Thr Lys Asp Ile Asn Thr Thr Asp
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<213> Mus musculus

<220>

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<400> 85

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Ile Leu Met Ser Leu Leu Phe Glu Asp Ala Cys Ala Lys Glu Lys Ser
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Gln Ser Pro Glu Asp Leu Ala Arg Val Pro Pro Asn Ser Thr Ser Asn
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Ile Leu Asn Arg Leu Leu Val Ser Tyr Asp Pro Arg Ile Arg Pro Asn
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Phe Lys Gly Ile Pro Val Asp Val Val Val Asn Ile Phe Ile Asn Ser
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ttt gga tcc att caa gag aca aca atg gac tat aga gtt aac att ttc 400
Phe Gly Ser Ile Gln Glu Thr Thr Met Asp Tyr Arg Val Asn Ile Phe
              95             100             105
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 Gly Tyr Tyr Thr Cys Val Glu Val Ile Phe Thr Leu Arg Arg Gln Val
 255 260 265
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Asn Ala Ala Lys Lys Asn Thr Val Asn Gly Thr Gly Thr Pro Val His			
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Ile Ser Thr Leu Gln Val Gly Glu Thr Arg Cys Lys Lys Val Cys Thr			
395	400	405	410
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Ser Lys Ser Asp Leu Arg Ser Asn Asp Phe Ser Ile Val Gly Ser Leu			
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<211> 496

<212> PRT

<213> Mus musculus

<400> 86

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35 40 45

Ala Arg Val Pro Pro Asn Ser Thr Ser Asn Ile Leu Asn Arg Leu Leu

50 55 60

Val Ser Tyr Asp Pro Arg Ile Arg Pro Asn Phe Lys Gly Ile Pro Val

65 70 75 80

Asp Val Val Val Asn Ile Phe Ile Asn Ser Phe Gly Ser Ile Gln Glu

85 90 95

Thr Thr Met Asp Tyr Arg Val Asn Ile Phe Leu Arg Gln Lys Trp Asn

100 105 110

Asp Pro Arg Leu Lys Leu Pro Ser Asp Phe Arg Gly Ser Asp Ala Leu

115 120 125

Thr Val Asp Pro Thr Met Tyr Lys Cys Leu Trp Lys Pro Asp Leu Phe

130 135 140

Phe Ala Asn Glu Lys Ser Ala Asn Phe His Asp Val Thr Gln Glu Asn

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Ile Leu Leu Phe Ile Phe Arg Asp Gly Asp Val Leu Val Ser Met Arg

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Leu Ser Ile Thr Leu Ser Cys Pro Leu Asp Leu Thr Leu Phe Pro Met

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Val Tyr Ala Pro Thr Leu Leu Ile Val Val Leu Ser Trp Leu Ser Phe		
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Trp Ile Asn Pro Asp Ala Ser Ala Ala Arg Val Pro Leu Gly Ile Phe		
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420

425

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435

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Gly Lys Pro Gln Ala Lys Asn Lys Lys Pro Pro Pro Ala Lys Pro Val

450

455

460

Ile Pro Thr Ala Ala Lys Arg Ile Asp Leu Tyr Ala Arg Ala Leu Phe

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cag ccc tac gtg gag gcg ctc ctc tcc tac acg agg atc aag cgc cca	1321		
Gln Pro Tyr Val Glu Ala Leu Leu Ser Tyr Thr Arg Ile Lys Arg Pro			
385	390	395	
cag gac cag ctc cgc ttc cca cgc atg ctc atg aag ctg gtg agc ctg	1369		
Gln Asp Gln Leu Arg Phe Pro Arg Met Leu Met Lys Leu Val Ser Leu			
400	405	410	
cgc acc ctc agc tcc gtg cac tgc gag cag gtc ttt gca ttg cga ctc	1417		
Arg Thr Leu Ser Ser Val His Ser Glu Gln Val Phe Ala Leu Arg Leu			
415	420	425	
cag gac aag aag ctg ccg ccc ttg ctg tcc gag atc tgg gat gtg cac	1465		
Gln Asp Lys Lys Leu Pro Pro Leu Leu Ser Glu Ile Trp Asp Val His			
430	435	440	445
gag tag gggcagccac aagtgcceca gccttggtgg tgtcttcttg aagatggact 1521			
Glu			
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35 40 45

Tyr Ile Val Val Ile Leu Glu Pro Glu Asp Glu Pro Glu Arg Lys Arg

50 55 60

Lys Lys Gly Pro Ala Pro Lys Met Leu Gly His Glu Leu Cys Arg Val

65 70 75 80

Cys Gly Asp Lys Ala Ser Gly Phe His Tyr Asn Val Leu Ser Cys Glu

85 90 95

Gly Cys Lys Gly Phe Phe Arg Arg Ser Val Val His Gly Gly Ala Gly

100 105 110

Arg Tyr Ala Cys Arg Gly Ser Gly Thr Cys Gln Met Asp Ala Phe Met

115 120 125

Arg Arg Lys Cys Gln Leu Cys Arg Leu Arg Lys Cys Lys Glu Ala Gly

130 135 140

Met Arg Glu Gln Cys Val Leu Ser Glu Glu Gln Ile Arg Lys Lys Arg

145 150 155 160

Ile Gln Lys Gln Gln Gln Gln Gln Pro Pro Pro Pro Ser Glu Pro Ala

165	170	175
Ala Ser Ser Ser Gly Arg Pro Ala Ala Ser Pro Gly Thr Ser Glu Ala		
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Ser Ser Gln Gly Ser Gly Glu Gly Glu Gly Ile Gln Leu Thr Ala Ala		
195	200	205
Gln Glu Leu Met Ile Gln Gln Leu Val Ala Ala Gln Leu Gln Cys Asn		
210	215	220
Lys Arg Ser Phe Ser Asp Gln Pro Lys Val Thr Pro Trp Pro Leu Gly		
225	230	235
Ala Asp Pro Gln Ser Arg Asp Ala Arg Gln Gln Arg Phe Ala His Phe		
245	250	255
Thr Glu Leu Ala Ile Ile Ser Val Gln Glu Ile Val Asp Phe Ala Lys		
260	265	270
Gln Val Pro Gly Phe Leu Gln Leu Gly Arg Glu Asp Gln Ile Ala Leu		
275	280	285
Leu Lys Ala Ser Thr Ile Glu Ile Met Leu Leu Glu Thr Ala Arg Arg		
290	295	300
Tyr Asn His Glu Thr Glu Cys Ile Thr Phe Leu Lys Asp Phe Thr Tyr		
305	310	315
Ser Lys Asp Asp Phe His Arg Ala Gly Leu Gln Val Glu Phe Ile Asn		
325	330	335
Pro Ile Phe Glu Phe Ser Arg Ala Met Arg Arg Leu Gly Leu Asp Asp		
340	345	350
Ala Glu Tyr Ala Leu Leu Ile Ala Ile Asn Ile Phe Ser Ala Asp Arg		
355	360	365
Pro Asn Val Gln Glu Pro Ser Arg Val Glu Ala Leu Gln Gln Pro Tyr		
370	375	380
Val Glu Ala Leu Leu Ser Tyr Thr Arg Ile Lys Arg Pro Gln Asp Gln		
385	390	395
		400

Leu Arg Phe Pro Arg Met Leu Met Lys Leu Val Ser Leu Arg Thr Leu

405

410

415

Ser Ser Val His Ser Glu Gln Val Phe Ala Leu Arg Leu Gln Asp Lys

420

425

430

Lys Leu Pro Pro Leu Leu Ser Glu Ile Trp Asp Val His Glu

435

440

445

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<211> 480

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<400> 92

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<211> 439

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<211> 352

<212> DNA

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<400> 94

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<211> 483

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<212> DNA

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<220>

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<400> 97

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Met Glu Ser Ser Lys

1

5

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Lys Met Asp Ala Ala Gly Thr Leu Gln Pro Asn Pro Pro Leu Lys Leu

10

15

20

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Gln Pro Asp Arg Gly Ala Gly Ser Val Leu Val Pro Glu Gln Gly Gly	
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Tyr Lys Glu Lys Phe Val Lys Thr Val Glu Asp Lys Tyr Lys Cys Glu	
40 45 50	
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Lys Cys Arg Leu Val Leu Cys Asn Pro Lys Gln Thr Glu Cys Gly His	
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Arg Phe Trp Gln Ser Cys Met Ala Ala Leu Leu Ser Ser Ser Ser Pro	
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Lys Cys Thr Ala Cys Gln Glu Ser Ile Ile Lys Asp Lys Val Phe Lys	
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Val His Leu Lys Asn Glu Cys Gln Phe Glu Glu Leu Pro Cys Leu Arg	
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Ala Asp Cys Lys Glu Lys Val Leu Arg Lys Asp Leu Arg Asp His Val	
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Glu Lys Ala Cys Lys Tyr Arg Glu Ala Thr Cys Ser His Cys Lys Ser	

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Gln Val Pro Met Ile Lys Leu Gln Lys His Glu Asp Thr Asp Cys Pro			
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Cys Val Val Val Ser Cys Pro His Lys Cys Ser Val Gln Thr Leu Leu			
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Arg Ser Glu Leu Ser Ala His Leu Ser Glu Cys Val Asn Ala Pro Ser			
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Thr Cys Ser Phe Lys Arg Tyr Gly Cys Val Phe Gln Gly Thr Asn Gln			
230	235	240	245
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Gln Ile Lys Ala His Glu Ala Ser Ser Ala Val Gln His Val Asn Leu			
250	255	260	
ctg aag gag tgg agc aac tcc ctg gag aag aag gtt tcc ctg ctg cag			1472
Leu Lys Glu Trp Ser Asn Ser Leu Glu Lys Lys Val Ser Leu Leu Gln			
265	270	275	
aat gaa agt gtt gag aaa aac aag agc atc caa agc ctg cac aac cag			1520
Asn Glu Ser Val Glu Lys Asn Lys Ser Ile Gln Ser Leu His Asn Gln			
280	285	290	
atc tgc agc ttt gag atc gag att gag agg cag aag gag atg ctc cga			1568
Ile Cys Ser Phe Glu Ile Glu Ile Glu Arg Gln Lys Glu Met Leu Arg			
295	300	305	
aac aac gag tcc aag atc ctt cac ctg cag cgg gta atc gac agc caa			1616
Asn Asn Glu Ser Lys Ile Leu His Leu Gln Arg Val Ile Asp Ser Gln			
310	315	320	325
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<210> 98

<211> 567

<212> PRT

<213> Mus musculus

<400> 98

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				20					25					30	
Pro	Glu	Gln	Gly	Gly	Tyr	Lys	Glu	Lys	Phe	Val	Lys	Thr	Val	Glu	Asp
				35					40					45	
Lys	Tyr	Lys	Cys	Glu	Lys	Cys	Arg	Leu	Val	Leu	Cys	Asn	Pro	Lys	Gln
				50					55					60	
Thr	Glu	Cys	Gly	His	Arg	Phe	Trp	Gln	Ser	Cys	Met	Ala	Ala	Leu	Leu

65	70	75	80
Ser Ser Ser Ser	Pro Lys Cys Thr	Ala Cys Gln Glu Ser	Ile Ile Lys
	85	90	95
Asp Lys Val Phe	Lys Asp Asn Cys	Cys Lys Arg Glu	Ile Leu Ala Leu
	100	105	110
Gln Val Tyr Cys	Arg Asn Glu Gly	Arg Gly Cys Ala	Glu Gln Leu Thr
	115	120	125
Leu Gly His Leu	Leu Val His Leu	Lys Asn Glu Cys	Gln Phe Glu Glu
	130	135	140
Leu Pro Cys Leu	Arg Ala Asp Cys	Lys Glu Lys Val	Leu Arg Lys Asp
	145	150	155
Leu Arg Asp His	Val Glu Lys Ala	Cys Lys Tyr Arg	Glu Ala Thr Cys
	165	170	175
Ser His Cys Lys	Ser Gln Val Pro	Met Ile Lys Leu	Gln Lys His Glu
	180	185	190
Asp Thr Asp Cys	Pro Cys Val Val	Val Ser Cys Pro	His Lys Cys Ser
	195	200	205
Val Gln Thr Leu	Leu Arg Ser Glu	Leu Ser Ala His	Leu Ser Glu Cys
	210	215	220
Val Asn Ala Pro	Ser Thr Cys Ser	Phe Lys Arg Tyr	Gly Cys Val Phe
	225	230	235
Gln Gly Thr Asn	Gln Gln Ile Lys	Ala His Glu Ala	Ser Ser Ala Val
	245	250	255
Gln His Val Asn	Leu Leu Lys Glu	Trp Ser Asn Ser	Leu Glu Lys Lys
	260	265	270
Val Ser Leu Leu	Gln Asn Glu Ser	Val Glu Lys Asn	Lys Ser Ile Gln
	275	280	285
Ser Leu His Asn	Gln Ile Cys Ser	Phe Glu Ile Glu	Ile Glu Arg Gln
	290	295	300

Lys Glu Met Leu Arg Asn Asn Glu Ser Lys Ile Leu His Leu Gln Arg
 305 310 315 320
 Val Ile Asp Ser Gln Ala Glu Lys Leu Lys Glu Leu Asp Lys Glu Ile
 325 330 335
 Arg Pro Phe Arg Gln Asn Trp Glu Glu Ala Asp Ser Met Lys Ser Ser
 340 345 350
 Val Glu Ser Leu Gln Asn Arg Val Thr Glu Leu Glu Ser Val Asp Lys
 355 360 365
 Ser Ala Gly Gln Ala Ala Arg Asn Thr Gly Leu Leu Glu Ser Gln Leu
 370 375 380
 Ser Arg His Asp Gln Met Leu Ser Val His Asp Ile Arg Leu Ala Asp
 385 390 395 400
 Met Asp Leu Arg Phe Gln Val Leu Glu Thr Ala Ser Tyr Asn Gly Val
 405 410 415
 Leu Ile Trp Lys Ile Arg Asp Tyr Lys Arg Arg Lys Gln Glu Ala Val
 420 425 430
 Met Gly Lys Thr Leu Ser Leu Tyr Ser Gln Pro Phe Tyr Thr Gly Tyr
 435 440 445
 Phe Gly Tyr Lys Met Cys Ala Arg Val Tyr Leu Asn Gly Asp Gly Met
 450 455 460
 Gly Lys Gly Thr His Leu Ser Leu Phe Phe Val Ile Met Arg Gly Glu
 465 470 475 480
 Tyr Asp Ala Leu Leu Pro Trp Pro Phe Lys Gln Lys Val Thr Leu Met
 485 490 495
 Leu Met Asp Gln Gly Ser Ser Arg Arg His Leu Gly Asp Ala Phe Lys
 500 505 510
 Pro Asp Pro Asn Ser Ser Ser Phe Lys Lys Pro Thr Gly Glu Met Asn
 515 520 525
 Ile Ala Ser Gly Cys Pro Val Phe Val Ala Gln Thr Val Leu Glu Asn

530	535	540	
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Thr Ser Asp Leu Pro Asp Pro			
565			

<210> 99

<211> 369

<212> DNA

<213> Mus musculus

<400> 99

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aacggaggcc ccaactgaacc ccagtaagaa ccgggacact cttctccaat atcgtgctgt 300
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<210> 100

<211> 456

<212> DNA

<213> Mus musculus

<400> 100

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 ctggctgatg gcggccggcc tgacaacaca ggacgggggt acgtgctgag acggatcctt 360
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<210> 101

<211> 478

<212> DNA

<213> Mus musculus

<400> 101

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 ctggagcatc gaaagcagca gaacgagagc gcggaggacg agcaggagct gtcggaggtc 180
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 gccaatcttt gcccgagac tgctgaagag tccaaagctc tgattccaag cctggaaggg 360
 cgttttgaag atgaggagct gcagcagatt ctgatgaca tccagacgaa gcgcacgttc 420
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<210> 102

<211> 676

<212> DNA

<213> Mus musculus

<400> 102

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ccattgagac ataccagggt catgactacc tccgcagcaa gtgtgtctcc ctctatgaaa 180
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 tcttgcatat agcttggcat ccttcagaaa acattatagc agttgcggct acgaataact 480
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<210> 103

<211> 2836

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (233).. (781)

<400> 103

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 ggtccgggt gccgcggtg ggcggtcaag gcggtcagca ccggagcccg ccagcgggtg 180
 cccgcgcgag cctggggagc gcggccggcc ggcgcgccct gagggcgsga ag atg ccg 238

Met Pro

1

cgc gtc gtc ccg gac cag agg agc aag ttc gag aac gag gag ttc ttc 286
 Arg Val Val Pro Asp Gln Arg Ser Lys Phe Glu Asn Glu Glu Phe Phe

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agg aag ctg agc cgc gag tgc gag att aag tac acg ggc ttc agg gac	334		
Arg Lys Leu Ser Arg Glu Cys Glu Ile Lys Tyr Thr Gly Phe Arg Asp			
20	25	30	
cgg ccc cac gag gag cgc cag aca cgc ttc cag aac gcc tgc cgc gac	382		
Arg Pro His Glu Glu Arg Gln Thr Arg Phe Gln Asn Ala Cys Arg Asp			
35	40	45	50
ggt cgc tcg gag atc gct ttt gtg gct aca gga acc aat ctg tct ctc	430		
Gly Arg Ser Glu Ile Ala Phe Val Ala Thr Gly Thr Asn Leu Ser Leu			
55	60	65	
cag ttt ttt ccg gcc agc tgg cag gga gaa cag cga caa aca cct agc	478		
Gln Phe Phe Pro Ala Ser Trp Gln Gly Glu Gln Arg Gln Thr Pro Ser			
70	75	80	
cgg gaa tat gtc gac tta gag aga gaa gca ggc aag gta tac ttg aag	526		
Arg Glu Tyr Val Asp Leu Glu Arg Glu Ala Gly Lys Val Tyr Leu Lys			
85	90	95	
gct ccc atg att ctg aat gga gtg tgt gtt ata tgg aag ggc tgg att	574		
Ala Pro Met Ile Leu Asn Gly Val Cys Val Ile Trp Lys Gly Trp Ile			
100	105	110	
gat ctc cac aga ttg gat ggt atg ggt tgc ctg gag ttt gat gag gag	622		
Asp Leu His Arg Leu Asp Gly Met Gly Cys Leu Glu Phe Asp Glu Glu			
115	120	125	130
cga gcc cag cag gaa gat gca tta gca caa cag gcc ttt gaa gag gct	670		
Arg Ala Gln Gln Glu Asp Ala Leu Ala Gln Gln Ala Phe Glu Glu Ala			
135	140	145	
cga aga aga act cga gaa ttt gag gat aga gac agg tct cac cgg gag	718		
Arg Arg Arg Thr Arg Glu Phe Glu Asp Arg Asp Arg Ser His Arg Glu			
150	155	160	
gaa atg gag gtg aga gtt tca cag ctg ctg gca gta act ggc aag aag	766		

Glu Met Glu Val Arg Val Ser Gln Leu Leu Ala Val Thr Gly Lys Lys

165

170

175

aca gca aga ccc tag tcctgggtct aacttaggtg gcggtgatga tctcaaactt 821

Thr Ala Arg Pro

180

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<210> 104

<211> 182

<212> PRT

<213> Mus musculus

<400> 104

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			20					25					30		
Arg	Asp	Arg	Pro	His	Glu	Glu	Arg	Gln	Thr	Arg	Phe	Gln	Asn	Ala	Cys
			35					40				45			
Arg	Asp	Gly	Arg	Ser	Glu	Ile	Ala	Phe	Val	Ala	Thr	Gly	Thr	Asn	Leu
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Ser	Leu	Gln	Phe	Phe	Pro	Ala	Ser	Trp	Gln	Gly	Glu	Gln	Arg	Gln	Thr
		65			70				75					80	
Pro	Ser	Arg	Glu	Tyr	Val	Asp	Leu	Glu	Arg	Glu	Ala	Gly	Lys	Val	Tyr
				85					90					95	

Leu Lys Ala Pro Met Ile Leu Asn Gly Val Cys Val Ile Trp Lys Gly
 100 105 110
 Trp Ile Asp Leu His Arg Leu Asp Gly Met Gly Cys Leu Glu Phe Asp
 115 120 125
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 130 135 140
 Glu Ala Arg Arg Arg Thr Arg Glu Phe Glu Asp Arg Asp Arg Ser His
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 Lys Lys Thr Ala Arg Pro
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<210> 105

<211> 2768

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (94).. (1734)

<400> 105

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Met Met Arg Ile Leu Ser Leu

1

5

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Gln Glu Glu Trp Ala Leu Leu Asp Pro Ser Gln Lys Ser Leu Tyr Lys			
25	30	35	
gat gtg atg ctc gaa acc tat agg aac ctc act gcc ata ggc tat aac	258		
Asp Val Met Leu Glu Thr Tyr Arg Asn Leu Thr Ala Ile Gly Tyr Asn			
40	45	50	55
tgg gaa gaa gat aat att gaa gaa gat tgt gaa aat tct gga aga ccc	306		
Trp Glu Glu Asp Asn Ile Glu Glu Asp Cys Glu Asn Ser Gly Arg Pro			
60	65	70	
act agg cat ctt caa agg gat gga cca agt aat act gga gag aaa ccc	354		
Thr Arg His Leu Gln Arg Asp Gly Pro Ser Asn Thr Gly Glu Lys Pro			
75	80	85	
ttt gaa tgt att caa tat gat gga gcc ttt gca aga aac cat cat cag	402		
Phe Glu Cys Ile Gln Tyr Asp Gly Ala Phe Ala Arg Asn His His Gln			
90	95	100	
tta cat aag gac act gga tct ttc atg tct tat act gat cgt caa ata	450		
Leu His Lys Asp Thr Gly Ser Phe Met Ser Tyr Thr Asp Arg Gln Ile			
105	110	115	
cat aga aga cca cac act gaa gaa aaa gtc tat gat ggt aac caa tgt	498		
His Arg Arg Pro His Thr Glu Glu Lys Val Tyr Asp Gly Asn Gln Cys			
120	125	130	135
ggg aaa acc ttt tca tgt cac aac cat ttt gaa atc cgt aaa gga aca	546		
Gly Lys Thr Phe Ser Cys His Asn His Phe Glu Ile Arg Lys Gly Thr			
140	145	150	
tat act gga gaa aaa ccc tat gaa tgt aat caa tgt ggg aaa gcc ttt	594		
Tyr Thr Gly Glu Lys Pro Tyr Glu Cys Asn Gln Cys Gly Lys Ala Phe			
155	160	165	
gca cgc aac agc aat ctt cta gac cat aaa aga ata cat act gga gag	642		

Ala Arg Asn Ser Asn Leu Leu Asp His Lys Arg Ile His Thr Gly Glu
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 Lys Pro Tyr Lys Cys Lys Gln Cys Gly Lys Asp Phe Thr His His Ser
 185 190 195
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 Thr Leu His Ile His Lys Arg Ile His Thr Arg Glu Lys Thr Tyr Lys
 200 205 210 215
 tgt aac cag tgt atg acc att gct cat ctt caa tgt cat aaa ata aca 786
 Cys Asn Gln Cys Met Thr Ile Ala His Leu Gln Cys His Lys Ile Thr
 220 225 230
 cat act gga gag aaa ctc tgt gaa tat aac caa tgt tgg aaa gcc ttt 834
 His Thr Gly Glu Lys Leu Cys Glu Tyr Asn Gln Cys Trp Lys Ala Phe
 235 240 245
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 Ala Tyr His Lys Thr Leu Gln Ile His Glu Arg Thr His Thr Gly Glu
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 Lys Leu Tyr Gln Cys Asn Gln Cys Ala Lys Ala Phe Pro Tyr His Arg
 265 270 275
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 Thr Leu Gln Ile His Glu Arg Thr His Thr Gly Glu Lys Pro Tyr Glu
 280 285 290 295
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 His Lys Thr Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asn Gln Cys
 315 320 325

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 330 335 340
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 345 350 355
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 360 365 370 375
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 Lys Pro Tyr Glu Cys Asn Gln Cys Gly Lys Ala Phe Ala Cys Pro Arg
 380 385 390
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 Tyr Leu Gln Ile His Lys Arg Thr His Thr Gly Glu Lys Pro Tyr Glu
 395 400 405
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 Gly Lys Ala Phe Ala Cys Asn Arg Tyr Leu Gln Ile His Lys Arg Thr
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475 480 485
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 Lys Pro Tyr Glu Cys Asn Gln Cys Gly Lys Ala Phe Thr Gln Phe Phe
 490 495 500
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 Pro Leu Lys Arg His Glu Ile Thr His Thr Lys Glu Lys Pro Tyr Glu
 505 510 515
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 520 525 530 535
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 His Lys Arg Thr His Thr Gly Glu Lys Pro Val
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 ttacatgtca cagtactctt caaatccgta aaagaacacg tactggagaa aaaccctgtg 1984
 tatgtaaaca atgtggcaaa gcctttgcat gtcacagtac tccatgaatt cataaaagaa 2044
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gtta 2768

<210> 106

<211> 546

<212> PRT

<213> Mus musculus

<400> 106

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20 25 30

Ser Gln Lys Ser Leu Tyr Lys Asp Val Met Leu Glu Thr Tyr Arg Asn

35 40 45

Leu Thr Ala Ile Gly Tyr Asn Trp Glu Glu Asp Asn Ile Glu Glu Asp

50 55 60

Cys Glu Asn Ser Gly Arg Pro Thr Arg His Leu Gln Arg Asp Gly Pro

65 70 75 80

Ser Asn Thr Gly Glu Lys Pro Phe Glu Cys Ile Gln Tyr Asp Gly Ala

85 90 95

Phe Ala Arg Asn His His Gln Leu His Lys Asp Thr Gly Ser Phe Met

100 105 110

Ser Tyr Thr Asp Arg Gln Ile His Arg Arg Pro His Thr Glu Glu Lys

115 120 125

Val Tyr Asp Gly Asn Gln Cys Gly Lys Thr Phe Ser Cys His Asn His

130 135 140

Phe Glu Ile Arg Lys Gly Thr Tyr Thr Gly Glu Lys Pro Tyr Glu Cys

145 150 155 160

Asn Gln Cys Gly Lys Ala Phe Ala Arg Asn Ser Asn Leu Leu Asp His
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 Lys Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Lys Gln Cys Gly
 180 185 190
 Lys Asp Phe Thr His His Ser Thr Leu His Ile His Lys Arg Ile His
 195 200 205
 Thr Arg Glu Lys Thr Tyr Lys Cys Asn Gln Cys Met Thr Ile Ala His
 210 215 220
 Leu Gln Cys His Lys Ile Thr His Thr Gly Glu Lys Leu Cys Glu Tyr
 225 230 235 240
 Asn Gln Cys Trp Lys Ala Phe Ala Tyr His Lys Thr Leu Gln Ile His
 245 250 255
 Glu Arg Thr His Thr Gly Glu Lys Leu Tyr Gln Cys Asn Gln Cys Ala
 260 265 270
 Lys Ala Phe Pro Tyr His Arg Thr Leu Gln Ile His Glu Arg Thr His
 275 280 285
 Thr Gly Glu Lys Pro Tyr Glu Cys Asn Gln Cys Gly Lys Ala Phe Ala
 290 295 300
 Cys Leu Arg Asn Leu Gln Asn His Lys Thr Thr His Thr Gly Glu Lys
 305 310 315 320
 Pro Tyr Glu Cys Asn Gln Cys Gly Arg Ala Phe Arg Gln Tyr Val Tyr
 325 330 335
 Leu Gln Cys His Glu Arg Ile His Thr Gly Glu Lys Pro Phe Glu Cys
 340 345 350
 Asn Gln Cys Gly Lys Ala Phe Ala His His Ser Thr Leu Gln Arg His
 355 360 365
 Lys Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asn Gln Cys Gly
 370 375 380
 Lys Ala Phe Ala Cys Pro Arg Tyr Leu Gln Ile His Lys Arg Thr His

385 390 395 400
 Thr Gly Glu Lys Pro Tyr Glu Cys Asn Gln Cys Gly Lys Ala Phe Ala
 405 410 415
 Cys Tyr Gln Ser Phe Gln Ile His Lys Arg Thr His Thr Gly Glu Lys
 420 425 430
 Pro Tyr Glu Cys Asn Gln Cys Gly Lys Ala Phe Ala Cys Asn Arg Tyr
 435 440 445
 Leu Gln Ile His Lys Arg Thr His Thr Gly Glu Arg Pro Tyr Glu Cys
 450 455 460
 Asn Gln Cys Gly Lys Ala Phe Thr Cys Arg Ser Asn Leu Gln Ile His
 465 470 475 480
 Lys Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asn Gln Cys Gly
 485 490 495
 Lys Ala Phe Thr Gln Phe Phe Pro Leu Lys Arg His Glu Ile Thr His
 500 505 510
 Thr Lys Glu Lys Pro Tyr Glu Cys Asn Gln Cys Gly Lys Ala Phe Thr
 515 520 525
 Arg His Ser Thr Leu Gln Ile His Lys Arg Thr His Thr Gly Glu Lys
 530 535 540
 Pro Val
 545

<210> 107

<211> 384

<212> DNA

<213> Mus musculus

<400> 107

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 gacaacttcc tcatgggcct ggggaagaaa ggcaacctgg tgtacatcat tgacttcggc 180
 ctggccaaga agtaccgca tggccgcaca caccagcata ticcctaccg ggaaaacaag 240
 aacctgaccg gcactgccc ctaigcctct atcaacaccc acctgggcat tgagcaaagc 300
 cgtcgagatg acctagagag ctggggctat gtgctcatgt acttcaacct gggctccctg 360
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<210> 108

<211> 2543

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (248).. (1255)

<400> 108

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 tgccgcgggc cgccctgcgc ggaccgtagg ctgcgcagac gccacctcg atcctgtatc 180
 gctgcgggcg cctcggcgcg cctgtgata cgcaatcctg cggcgggcgg catgggataa 240
 tgcggcc atg gtg cgc cga gat cgc ttg cgc agg atg aga gag tgg tgg 289

Met Val Arg Arg Asp Arg Leu Arg Arg Met Arg Glu Trp Trp

1

5

10

gtc caa gta ggg ctc ctg gct gtg ccc ttg ctg gct gcg tac ctg cac 337
 Val Gln Val Gly Leu Leu Ala Val Pro Leu Leu Ala Ala Tyr Leu His
 15 20 25 30
 atc ccg ccc cct cag ctc tcc cct gct ctg cac tca tgg aag act tct 385
 Ile Pro Pro Pro Gln Leu Ser Pro Ala Leu His Ser Trp Lys Thr Ser

35	40	45	
ggc aag ttt ttc acc tac aaa ggc cta cgc atc ttc tac caa gat tct	433		
Gly Lys Phe Phe Thr Tyr Lys Gly Leu Arg Ile Phe Tyr Gln Asp Ser			
50	55	60	
gtc ggt gtg gtc gga agc cct gag ata gtt gtg ctt tta cat ggc ttt	481		
Val Gly Val Val Gly Ser Pro Glu Ile Val Val Leu Leu His Gly Phe			
65	70	75	
cca aca tcc agc tat gac tgg tac aag atc tgg gaa ggg ctg acc ctg	529		
Pro Thr Ser Ser Tyr Asp Trp Tyr Lys Ile Trp Glu Gly Leu Thr Leu			
80	85	90	
agg ttc cat cga gtg atc gcc ctt gat ttc tta ggc ttt ggc ttc agt	577		
Arg Phe His Arg Val Ile Ala Leu Asp Phe Leu Gly Phe Gly Phe Ser			
95	100	105	110
gac aag ccg aga cca cat cag tac tcc ata ttt gag cag gcc agc atc	625		
Asp Lys Pro Arg Pro His Gln Tyr Ser Ile Phe Glu Gln Ala Ser Ile			
115	120	125	
gta gag tcc ctt ctg cgg cac ctg ggg ctc cag aac cgc aga atc aac	673		
Val Glu Ser Leu Leu Arg His Leu Gly Leu Gln Asn Arg Arg Ile Asn			
130	135	140	
ctg ctg tct cac gat tat gga gat atc gtt gct cag gaa ctg ctg tac	721		
Leu Leu Ser His Asp Tyr Gly Asp Ile Val Ala Gln Glu Leu Leu Tyr			
145	150	155	
agg tac aag cag aat cga tct ggc cgg ctc acc ata aag agt ctc tgt	769		
Arg Tyr Lys Gln Asn Arg Ser Gly Arg Leu Thr Ile Lys Ser Leu Cys			
160	165	170	
ctg tcg aat gga ggt atc ttt cct gag acg cat cgt cct ctc ctt ctc	817		
Leu Ser Asn Gly Gly Ile Phe Pro Glu Thr His Arg Pro Leu Leu Leu			
175	180	185	190
caa aag ctc ctc aaa gac gga ggt gtg ctt tcc ccc atc ctc acc agg	865		

Gln Lys Leu Leu Lys Asp Gly Gly Val Leu Ser Pro Ile Leu Thr Arg
 195 200 205
 ctc atg aat ttc ttc gtg ttc tct cga ggt ctc act cca gtc ttt gga 913
 Leu Met Asn Phe Phe Val Phe Ser Arg Gly Leu Thr Pro Val Phe Gly
 210 215 220
 ccg tat act cga ccc act gag agt gag ctg tgg gac atg tgg gct gtg 961
 Pro Tyr Thr Arg Pro Thr Glu Ser Glu Leu Trp Asp Met Trp Ala Val
 225 230 235
 att cgc aac aat gac ggc aac ctg gtc atc gac agt ctt tta cag tac 1009
 Ile Arg Asn Asn Asp Gly Asn Leu Val Ile Asp Ser Leu Leu Gln Tyr
 240 245 250
 att aat caa agg aag aaa ttc aga aga cgc tgg gtg gga gcg ctt gct 1057
 Ile Asn Gln Arg Lys Lys Phe Arg Arg Arg Trp Val Gly Ala Leu Ala
 255 260 265 270
 tct gtg tcc atc ccc att cat ttt atc tat ggg cca ttg gat cct ata 1105
 Ser Val Ser Ile Pro Ile His Phe Ile Tyr Gly Pro Leu Asp Pro Ile
 275 280 285
 aat ccg tat cca gag ttt ttg gag ctg tac agg aaa acg ctg ccg cgg 1153
 Asn Pro Tyr Pro Glu Phe Leu Glu Leu Tyr Arg Lys Thr Leu Pro Arg
 290 295 300
 tcc aca gtg tcg att ctg gat gac cac att agc cac tac cca cag cta 1201
 Ser Thr Val Ser Ile Leu Asp Asp His Ile Ser His Tyr Pro Gln Leu
 305 310 315
 gag gat ccc atg ggc ttc ttg aat gca tat atg ggc ttc atc aac tcc 1249
 Glu Asp Pro Met Gly Phe Leu Asn Ala Tyr Met Gly Phe Ile Asn Ser
 320 325 330
 ttc tga gctggaaaga gtagcctccc tgtattacct cccccattct cgtaicgtg 1305
 Phe
 335

tgtattccac ttagaaatgc ccaaaagagg tcctggccat caaatactat cctttcatca 1365
 aagtccattt ccttcacatt ggigaacaaa ctacaggaat caggcagctg gaactctata 1425
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 agtgttctga gtagagctt aagactgatt tgcatactca tgtatatatt taaaaacagt 2025
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<210> 109

<211> 335

<212> PRT

<213> Mus musculus

<400> 109

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Pro Pro Gln Leu Ser Pro Ala Leu His Ser Trp Lys Thr Ser Gly Lys			
35	40	45	
Phe Phe Thr Tyr Lys Gly Leu Arg Ile Phe Tyr Gln Asp Ser Val Gly			
50	55	60	
Val Val Gly Ser Pro Glu Ile Val Val Leu Leu His Gly Phe Pro Thr			
65	70	75	80
Ser Ser Tyr Asp Trp Tyr Lys Ile Trp Glu Gly Leu Thr Leu Arg Phe			
85	90	95	
His Arg Val Ile Ala Leu Asp Phe Leu Gly Phe Gly Phe Ser Asp Lys			
100	105	110	
Pro Arg Pro His Gln Tyr Ser Ile Phe Glu Gln Ala Ser Ile Val Glu			
115	120	125	
Ser Leu Leu Arg His Leu Gly Leu Gln Asn Arg Arg Ile Asn Leu Leu			
130	135	140	
Ser His Asp Tyr Gly Asp Ile Val Ala Gln Glu Leu Leu Tyr Arg Tyr			
145	150	155	160
Lys Gln Asn Arg Ser Gly Arg Leu Thr Ile Lys Ser Leu Cys Leu Ser			
165	170	175	
Asn Gly Gly Ile Phe Pro Glu Thr His Arg Pro Leu Leu Leu Gln Lys			
180	185	190	
Leu Leu Lys Asp Gly Gly Val Leu Ser Pro Ile Leu Thr Arg Leu Met			
195	200	205	
Asn Phe Phe Val Phe Ser Arg Gly Leu Thr Pro Val Phe Gly Pro Tyr			
210	215	220	
Thr Arg Pro Thr Glu Ser Glu Leu Trp Asp Met Trp Ala Val Ile Arg			
225	230	235	240

Asn Asn Asp Gly Asn Leu Val Ile Asp Ser Leu Leu Gln Tyr Ile Asn
 245 250 255
 Gln Arg Lys Lys Phe Arg Arg Arg Trp Val Gly Ala Leu Ala Ser Val
 260 265 270
 Ser Ile Pro Ile His Phe Ile Tyr Gly Pro Leu Asp Pro Ile Asn Pro
 275 280 285
 Tyr Pro Glu Phe Leu Glu Leu Tyr Arg Lys Thr Leu Pro Arg Ser Thr
 290 295 300
 Val Ser Ile Leu Asp Asp His Ile Ser His Tyr Pro Gln Leu Glu Asp
 305 310 315 320
 Pro Met Gly Phe Leu Asn Ala Tyr Met Gly Phe Ile Asn Ser Phe
 325 330 335

<210> 110

<211> 608

<212> DNA

<213> Mus musculus

<400> 110

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 cgggcacagg gacactggtg gcttccattg tctccaagat gacatcttca gcagccatgg 180
 tcaaagctgg aggggcagtc tctggcacca ttctagctgg ttcgaagggg ctcacctgt 240
 taacacagag tgccctgggc tctgcaacat ctgcacttgg agcactgaag gttaggcacca 300
 ttttatctgg gttctctgcc tccaccttgg ctgcttcccc cattggagcc aaggctgttg 360
 tggctgtgct tgggggagcc atgacagtag ctgctgtacc acctgcgctg agtgcgttgg 420
 gcctcaccgc ctcaggaatt gcagcctcct ctctagcagc taagatgatg tccttgtcag 480
 ctattgctaa tgggggtgga gtcccagctg gtggcctggt ggcatctctg aagtctgctg 540
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tgccagtg

608

<210> 111

<211> 1361

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (27).. (476)

<400> 111

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Met Ala Asp Gln Leu Thr Glu Glu Gln

1

5

att gct gaa ttc aag gaa gct ttc tcc cta ttc gat aag gat ggt gac 101

Ile Ala Glu Phe Lys Glu Ala Phe Ser Leu Phe Asp Lys Asp Gly Asp

10

15

20

25

ggc acc atc aca acc aag gaa ctg ggg acc gtc atg cgg tca ctg ggt 149

Gly Thr Ile Thr Thr Lys Glu Leu Gly Thr Val Met Arg Ser Leu Gly

30

35

40

cag aac cca aca gaa gcc gag ctg cag gat atg atc aac gaa gtg gat 197

Gln Asn Pro Thr Glu Ala Glu Leu Gln Asp Met Ile Asn Glu Val Asp

45

50

55

gct gat ggc aat ggc acc att gac ttc cca gag ttc ttg act atg atg 245

Ala Asp Gly Asn Gly Thr Ile Asp Phe Pro Glu Phe Leu Thr Met Met

60

65

70

gct aga aaa atg aaa gac aca gat agc gaa gaa gag atc cgc gag gcc 293

Ala Arg Lys Met Lys Asp Thr Asp Ser Glu Glu Glu Ile Arg Glu Ala

75	80	85	
ttc cga gtg ttt gac aag gat ggg aat ggt tac atc agt gcg gca gaa	341		
Phe Arg Val Phe Asp Lys Asp Gly Asn Gly Tyr Ile Ser Ala Ala Glu			
90	95	100	105
ctg cgc cac gtc atg aca aac tta gga gaa aag cta aca gat gaa gaa	389		
Leu Arg His Val Met Thr Asn Leu Gly Glu Lys Leu Thr Asp Glu Glu			
110	115	120	
gta gat gaa atg atc aga gaa gca gat att gat ggc gac gga caa gtc	437		
Val Asp Glu Met Ile Arg Glu Ala Asp Ile Asp Gly Asp Gly Gln Val			
125	130	135	
aac tat gaa gaa ttc gta cag atg atg act gca aaa tga agacctactt	486		
Asn Tyr Glu Glu Phe Val Gln Met Met Thr Ala Lys			
140	145	150	
tcaactactt tccccctct agaagaatca aattgaaatc ttttacttac ctcttagaaa	546		
aaaaagaaaa aaaaagaaaa gttcatttct tcatctgtgt tgtatctagc gaagctgatg	606		
tcagaagccc ctctgtccac acacaaagtc tgcattgtatt ggtcgggtgtt cctgccccta	666		
aagtcaagcc cctacatcag ttttacagta taaataactcg tactacctta taaggaagca	726		
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tattaagaaa tgtttcctaa gggagcattt ttggactgtg ttttaaaacc tagtgaacca	1206		
tgactcggag ccagagagta ggctgtgtct gtggacttga gcacaccatc aacattgctg	1266		
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<210> 112

<211> 149

<212> PRT

<213> Mus musculus

<400> 112

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 Leu Gly Thr Val Met Arg Ser Leu Gly Gln Asn Pro Thr Glu Ala Glu
 35 40 45
 Leu Gln Asp Met Ile Asn Glu Val Asp Ala Asp Gly Asn Gly Thr Ile
 50 55 60
 Asp Phe Pro Glu Phe Leu Thr Met Met Ala Arg Lys Met Lys Asp Thr
 65 70 75 80
 Asp Ser Glu Glu Glu Ile Arg Glu Ala Phe Arg Val Phe Asp Lys Asp
 85 90 95
 Gly Asn Gly Tyr Ile Ser Ala Ala Glu Leu Arg His Val Met Thr Asn
 100 105 110
 Leu Gly Glu Lys Leu Thr Asp Glu Glu Val Asp Glu Met Ile Arg Glu
 115 120 125
 Ala Asp Ile Asp Gly Asp Gly Gln Val Asn Tyr Glu Glu Phe Val Gln
 130 135 140
 Met Met Thr Ala Lys
 145

<210> 113

<211> 3733

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (310).. (3249)

<400> 113

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 ctccgtccca ccaggatccg tggcgagtgg gggccgcggc agctgcgtcc ccatgaggag 300
 gggaggaag atg ccg gct gag ctg ctg ctg ctg ctg ata gtc gcc ttc gcc 351

Met Pro Ala Glu Leu Leu Leu Leu Leu Ile Val Ala Phe Ala

1 5 10

aat ccc agc tgc cag gtg ctg tca tca ctg cgc atg gct gca atc ctg 399
 Asn Pro Ser Cys Gln Val Leu Ser Ser Leu Arg Met Ala Ala Ile Leu

15 20 25 30

gac gac cag acc gtg tgt ggc cgt ggt gag cgt ctg gcc ctg gcc ctg 447
 Asp Asp Gln Thr Val Cys Gly Arg Gly Glu Arg Leu Ala Leu Ala Leu

35 40 45

gcc cga gag cag atc aat ggg atc atc gag gtc cca gcc aag gcc aga 495
 Ala Arg Glu Gln Ile Asn Gly Ile Ile Glu Val Pro Ala Lys Ala Arg

50 55 60

gtg gaa gta gac atc ttt gag ctg cag cgg gac agc cag tac gag acc 543
 Val Glu Val Asp Ile Phe Glu Leu Gln Arg Asp Ser Gln Tyr Glu Thr

65 70 75

acg gac acc atg tgt cag atc ctg ccc aag ggg gtt gta tct gtc ttg 591

278/2644

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ttt tac aag tac atc ctc acc acc atg gac ttt ccc atc ctg cat ctg 1071
Phe Tyr Lys Tyr Ile Leu Thr Thr Met Asp Phe Pro Ile Leu His Leu
      240              245              250
gat ggt atc gtg gag gac tcc tcc aac atc ctg ggc ttt tcc atg ttc 1119
Asp Gly Ile Val Glu Asp Ser Ser Asn Ile Leu Gly Phe Ser Met Phe
255              260              265              270
aac acc tcc cac ccc ttc tac cca gag ttt gtg cgc agc ctc aac atg 1167
Asn Thr Ser His Pro Phe Tyr Pro Glu Phe Val Arg Ser Leu Asn Met
              275              280              285
tcc tgg agg gag aac tgt gaa gcc agc acc tat cct ggc cct gcg ctg 1215
Ser Trp Arg Glu Asn Cys Glu Ala Ser Thr Tyr Pro Gly Pro Ala Leu
              290              295              300
tcc gca gcc ctg atg ttt gac gct gtg cac gtg gtg gta agc gct gtc 1263
Ser Ala Ala Leu Met Phe Asp Ala Val His Val Val Val Ser Ala Val
              305              310              315
cga gaa ctg aac cga agc cag gag att ggc gtc aag cca ctg gcc tgc 1311
Arg Glu Leu Asn Arg Ser Gln Glu Ile Gly Val Lys Pro Leu Ala Cys
              320              325              330
act tcg gcc aac att tgg ccc cat ggg acc agc ctt atg aac tac ctt 1359
Thr Ser Ala Asn Ile Trp Pro His Gly Thr Ser Leu Met Asn Tyr Leu
335              340              345              350
cga atg gta gag tat gac ggg ctg acc ggg cgg gtt gag ttc aac agc 1407
Arg Met Val Glu Tyr Asp Gly Leu Thr Gly Arg Val Glu Phe Asn Ser
              355              360              365
aaa ggg cag agg acc aac tac aca cta cgc atc ctg gag aag tcc cgc 1455
Lys Gly Gln Arg Thr Asn Tyr Thr Leu Arg Ile Leu Glu Lys Ser Arg
              370              375              380
cag ggc cac cgt gag ata ggg gtg tgg tac tct aac cgg acc ctg gcc 1503
Gln Gly His Arg Glu Ile Gly Val Trp Tyr Ser Asn Arg Thr Leu Ala

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385	390	395	
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Met Asn Ala Thr Thr Leu Asp Ile Asn Leu Ser Gln Thr Leu Ala Asn			
400	405	410	
aag act ctg gtg gtc aca act atc ctg gag aac ccg tat gtt atg cgc	1599		
Lys Thr Leu Val Val Thr Thr Ile Leu Glu Asn Pro Tyr Val Met Arg			
415	420	425	430
cgg ccc aac ttc cag gcc ttg tca ggg aat gag cgc ttc gag ggc ttc	1647		
Arg Pro Asn Phe Gln Ala Leu Ser Gly Asn Glu Arg Phe Glu Gly Phe			
435	440	445	
tgc gtg gac atg ctc agg gag ctg gcc gag ctg ctg cgc ttc cga tac	1695		
Cys Val Asp Met Leu Arg Glu Leu Ala Glu Leu Leu Arg Phe Arg Tyr			
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cgc ctg cgg ttg gta gag gac gga ctc tac ggg gca cct gag ccc aac	1743		
Arg Leu Arg Leu Val Glu Asp Gly Leu Tyr Gly Ala Pro Glu Pro Asn			
465	470	475	
ggt tcc tgg aca ggc atg gtt gga gaa ctc atc aac cgg aag gca gac	1791		
Gly Ser Trp Thr Gly Met Val Gly Glu Leu Ile Asn Arg Lys Ala Asp			
480	485	490	
ctg gct gtg gca gcc ttc acc atc acc gcc gag agg gag aag gtc atc	1839		
Leu Ala Val Ala Ala Phe Thr Ile Thr Ala Glu Arg Glu Lys Val Ile			
495	500	505	510
gac ttc tcc aag ccc ttc atg acc ctg ggg atc agc atc ctc tac agg	1887		
Asp Phe Ser Lys Pro Phe Met Thr Leu Gly Ile Ser Ile Leu Tyr Arg			
515	520	525	
gtg cac atg ggc cgc aag cct ggc tac ttc tcc ttc ctg gac ccc ttc	1935		
Val His Met Gly Arg Lys Pro Gly Tyr Phe Ser Phe Leu Asp Pro Phe			
530	535	540	
tcc cct gcc gtg tgg ctc ttc atg ctt ctt gcc tac ctg gct gtc agc	1983		

Ser Pro Ala Val Trp Leu Phe Met Leu Leu Ala Tyr Leu Ala Val Ser
 545 550 555
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 Cys Val Leu Phe Leu Ala Ala Arg Leu Ser Pro Tyr Glu Trp Tyr Asn
 560 565 570
 cca cac ccg tgt ctc cgg gcg cgt ccc cat atc ctg gag aac cag tac 2079
 Pro His Pro Cys Leu Arg Ala Arg Pro His Ile Leu Glu Asn Gln Tyr
 575 580 585 590
 acg ctg ggc aac agc ctc tgg ttc ccc gtg ggt ggc ttc atg cag cag 2127
 Thr Leu Gly Asn Ser Leu Trp Phe Pro Val Gly Gly Phe Met Gln Gln
 595 600 605
 ggc tcg gag gtc atg ccg cgg gca ctg tcc aca cgc tgt gtc agc gga 2175
 Gly Ser Glu Val Met Pro Arg Ala Leu Ser Thr Arg Cys Val Ser Gly
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 gtc tgg tgg gcc ttc acc ttg atc atc atc tcc tcc tac acg gcc aac 2223
 Val Trp Trp Ala Phe Thr Leu Ile Ile Ile Ser Ser Tyr Thr Ala Asn
 625 630 635
 ctg gct gcc ttc ctc acg gtg cag cgc atg gag gtg ccg gtg gag tcg 2271
 Leu Ala Ala Phe Leu Thr Val Gln Arg Met Glu Val Pro Val Glu Ser
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 gct gac gac ctg gcg gat cag acc aac att gag tac ggc act atc cac 2319
 Ala Asp Asp Leu Ala Asp Gln Thr Asn Ile Glu Tyr Gly Thr Ile His
 655 660 665 670
 gct ggc tcc acc atg acc ttc ttc cag aac tcg cgg tac cag acg tac 2367
 Ala Gly Ser Thr Met Thr Phe Phe Gln Asn Ser Arg Tyr Gln Thr Tyr
 675 680 685
 cag cgg atg tgg aac tac atg caa tcg aag cag ccc agc gtg ttt gtc 2415
 Gln Arg Met Trp Asn Tyr Met Gln Ser Lys Gln Pro Ser Val Phe Val
 690 695 700

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Lys Ser Thr Glu Glu Gly Ile Ala Arg Val Leu Asn Ser Arg Tyr Ala
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ttc ctg ctg gag tcc acc atg aac gag tac cac agg cgc ctc aat tgc 2511
Phe Leu Leu Glu Ser Thr Met Asn Glu Tyr His Arg Arg Leu Asn Cys
720 725 730
aac ctc acc cag atc ggg ggc ctc ctc gac acc aag ggc tac ggc atc 2559
Asn Leu Thr Gln Ile Gly Gly Leu Leu Asp Thr Lys Gly Tyr Gly Ile
735 740 745 750
ggc atg ccg ctg ggc tcc cct ttc cgg gat gag atc aca ctg gcc atc 2607
Gly Met Pro Leu Gly Ser Pro Phe Arg Asp Glu Ile Thr Leu Ala Ile
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ctg cag ctc cag gag aac aac agg ctg gag atc ctg aag cgc aag tgg 2655
Leu Gln Leu Gln Glu Asn Asn Arg Leu Glu Ile Leu Lys Arg Lys Trp
770 775 780
tgg gag ggc ggc cgg tgc ccc aag gag gag gac cac agg gcc aaa ggt 2703
Trp Glu Gly Gly Arg Cys Pro Lys Glu Glu Asp His Arg Ala Lys Gly
785 790 795
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Leu Gly Met Glu Asn Ile Gly Gly Ile Phe Val Val Leu Ile Cys Gly
800 805 810
ctc atc att gct gtc ttc gtg gcg gtc atg gag ttc atc tgg tcc acg 2799
Leu Ile Ile Ala Val Phe Val Ala Val Met Glu Phe Ile Trp Ser Thr
815 820 825 830
cgg agg tca gcg gag tcc gag gag gtg tcg gtg tgc cag gag atg ctg 2847
Arg Arg Ser Ala Glu Ser Glu Glu Val Ser Val Cys Gln Glu Met Leu
835 840 845
cag gag cta cgc cac gcc gtg tct tgc cga aag acc tcg cgt tcc cgc 2895
Gln Glu Leu Arg His Ala Val Ser Cys Arg Lys Thr Ser Arg Ser Arg

850	855	860	
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865	870	875	
gca gtc cgc gag atg cga ctc agc aac ggc aag ctc tac tgc gcc ggc	2991		
Ala Val Arg Glu Met Arg Leu Ser Asn Gly Lys Leu Tyr Ser Ala Gly			
880	885	890	
gcg ggc ggg gac gcg ggc gcg cac ggg ggt ccg cag cgc ctc ctg gac	3039		
Ala Gly Gly Asp Ala Gly Ala His Gly Gly Pro Gln Arg Leu Leu Asp			
895	900	905	910
gac ccc gga cct cct ggg gga ccc cgg ccc cag gct ccc acg ccc tgc	3087		
Asp Pro Gly Pro Pro Gly Gly Pro Arg Pro Gln Ala Pro Thr Pro Cys			
915	920	925	
acg cac gtg cgc gtc tgc cag gag tgc agg cgc atc cag gcg ctg cga	3135		
Thr His Val Arg Val Cys Gln Glu Cys Arg Arg Ile Gln Ala Leu Arg			
930	935	940	
gct tgc ggg gcc ggg gcg ccc cca cgt ggc ctg ggc acc cca gcc gaa	3183		
Ala Ser Gly Ala Gly Ala Pro Pro Arg Gly Leu Gly Thr Pro Ala Glu			
945	950	955	
gcc acc agc ccg cct cgg ccg cgg cca ggc ccc acc gga ccc cgc gag	3231		
Ala Thr Ser Pro Pro Arg Pro Arg Pro Gly Pro Thr Gly Pro Arg Glu			
960	965	970	
ctg acc gag cac gaa tga ccgtggacgg ggccgggcgt gcgccgactg	3279		
Leu Thr Glu His Glu			
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ggtgaagtcc gagcccggt cccgagcagg cctgcgcctc ctagtggact tgagcaaggg	3399		
tgtcgcggac gccgcattct atccgcaccg tggcggagga gcgcagagac cgaggactct	3459		
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<210> 114

<211> 979

<212> PRT

<213> Mus musculus

<400> 114

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35 40 45

Glu Gln Ile Asn Gly Ile Ile Glu Val Pro Ala Lys Ala Arg Val Glu

50 55 60

Val Asp Ile Phe Glu Leu Gln Arg Asp Ser Gln Tyr Glu Thr Thr Asp

65 70 75 80

Thr Met Cys Gln Ile Leu Pro Lys Gly Val Val Ser Val Leu Gly Pro

85 90 95

Ser Ser Ser Pro Ala Ser Ala Ser Thr Val Ser His Ile Cys Gly Glu

100 105 110

Lys Glu Ile Pro His Ile Lys Val Gly Pro Glu Glu Thr Pro Arg Leu

115 120 125

Gln Tyr Leu Arg Phe Ala Ser Val Ser Leu Tyr Pro Ser Asn Glu Asp

130 135 140

Val Ser Leu Ala Val Ser Arg Ile Leu Lys Ser Phe Asn Tyr Pro Ser
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 Ala Ser Leu Ile Cys Ala Lys Ala Glu Cys Leu Leu Arg Leu Glu Glu
 165 170 175
 Leu Val Arg Gly Phe Leu Ile Ser Lys Glu Thr Leu Ser Val Arg Met
 180 185 190
 Leu Asp Asp Ser Arg Asp Pro Thr Pro Leu Leu Lys Glu Ile Arg Asp
 195 200 205
 Asp Lys Val Ser Thr Ile Ile Ile Asp Ala Asn Ala Ser Ile Ser His
 210 215 220
 Leu Val Leu Arg Lys Ala Ser Glu Leu Gly Met Thr Ser Ala Phe Tyr
 225 230 235 240
 Lys Tyr Ile Leu Thr Thr Met Asp Phe Pro Ile Leu His Leu Asp Gly
 245 250 255
 Ile Val Glu Asp Ser Ser Asn Ile Leu Gly Phe Ser Met Phe Asn Thr
 260 265 270
 Ser His Pro Phe Tyr Pro Glu Phe Val Arg Ser Leu Asn Met Ser Trp
 275 280 285
 Arg Glu Asn Cys Glu Ala Ser Thr Tyr Pro Gly Pro Ala Leu Ser Ala
 290 295 300
 Ala Leu Met Phe Asp Ala Val His Val Val Val Ser Ala Val Arg Glu
 305 310 315 320
 Leu Asn Arg Ser Gln Glu Ile Gly Val Lys Pro Leu Ala Cys Thr Ser
 325 330 335
 Ala Asn Ile Trp Pro His Gly Thr Ser Leu Met Asn Tyr Leu Arg Met
 340 345 350
 Val Glu Tyr Asp Gly Leu Thr Gly Arg Val Glu Phe Asn Ser Lys Gly
 355 360 365
 Gln Arg Thr Asn Tyr Thr Leu Arg Ile Leu Glu Lys Ser Arg Gln Gly

370	375	380	
His Arg Glu Ile Gly Val Trp Tyr Ser Asn Arg Thr Leu Ala Met Asn			
385	390	395	400
Ala Thr Thr Leu Asp Ile Asn Leu Ser Gln Thr Leu Ala Asn Lys Thr			
405	410	415	
Leu Val Val Thr Thr Ile Leu Glu Asn Pro Tyr Val Met Arg Arg Pro			
420	425	430	
Asn Phe Gln Ala Leu Ser Gly Asn Glu Arg Phe Glu Gly Phe Cys Val			
435	440	445	
Asp Met Leu Arg Glu Leu Ala Glu Leu Leu Arg Phe Arg Tyr Arg Leu			
450	455	460	
Arg Leu Val Glu Asp Gly Leu Tyr Gly Ala Pro Glu Pro Asn Gly Ser			
465	470	475	480
Trp Thr Gly Met Val Gly Glu Leu Ile Asn Arg Lys Ala Asp Leu Ala			
485	490	495	
Val Ala Ala Phe Thr Ile Thr Ala Glu Arg Glu Lys Val Ile Asp Phe			
500	505	510	
Ser Lys Pro Phe Met Thr Leu Gly Ile Ser Ile Leu Tyr Arg Val His			
515	520	525	
Met Gly Arg Lys Pro Gly Tyr Phe Ser Phe Leu Asp Pro Phe Ser Pro			
530	535	540	
Ala Val Trp Leu Phe Met Leu Leu Ala Tyr Leu Ala Val Ser Cys Val			
545	550	555	560
Leu Phe Leu Ala Ala Arg Leu Ser Pro Tyr Glu Trp Tyr Asn Pro His			
565	570	575	
Pro Cys Leu Arg Ala Arg Pro His Ile Leu Glu Asn Gln Tyr Thr Leu			
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Gly Asn Ser Leu Trp Phe Pro Val Gly Gly Phe Met Gln Gln Gly Ser			
595	600	605	

Glu Val Met Pro Arg Ala Leu Ser Thr Arg Cys Val Ser Gly Val Trp
 610 615 620
 Trp Ala Phe Thr Leu Ile Ile Ile Ser Ser Tyr Thr Ala Asn Leu Ala
 625 630 635 640
 Ala Phe Leu Thr Val Gln Arg Met Glu Val Pro Val Glu Ser Ala Asp
 645 650 655
 Asp Leu Ala Asp Gln Thr Asn Ile Glu Tyr Gly Thr Ile His Ala Gly
 660 665 670
 Ser Thr Met Thr Phe Phe Gln Asn Ser Arg Tyr Gln Thr Tyr Gln Arg
 675 680 685
 Met Trp Asn Tyr Met Gln Ser Lys Gln Pro Ser Val Phe Val Lys Ser
 690 695 700
 Thr Glu Glu Gly Ile Ala Arg Val Leu Asn Ser Arg Tyr Ala Phe Leu
 705 710 715 720
 Leu Glu Ser Thr Met Asn Glu Tyr His Arg Arg Leu Asn Cys Asn Leu
 725 730 735
 Thr Gln Ile Gly Gly Leu Leu Asp Thr Lys Gly Tyr Gly Ile Gly Met
 740 745 750
 Pro Leu Gly Ser Pro Phe Arg Asp Glu Ile Thr Leu Ala Ile Leu Gln
 755 760 765
 Leu Gln Glu Asn Asn Arg Leu Glu Ile Leu Lys Arg Lys Trp Trp Glu
 770 775 780
 Gly Gly Arg Cys Pro Lys Glu Glu Asp His Arg Ala Lys Gly Leu Gly
 785 790 795 800
 Met Glu Asn Ile Gly Gly Ile Phe Val Val Leu Ile Cys Gly Leu Ile
 805 810 815
 Ile Ala Val Phe Val Ala Val Met Glu Phe Ile Trp Ser Thr Arg Arg
 820 825 830
 Ser Ala Glu Ser Glu Glu Val Ser Val Cys Gln Glu Met Leu Gln Glu

835	840	845
Leu Arg His Ala Val Ser Cys Arg Lys Thr Ser Arg Ser Arg Arg Arg		
850	855	860
Arg Arg Pro Gly Gly Pro Ser Arg Ala Leu Leu Ser Leu Arg Ala Val		
865	870	875
Arg Glu Met Arg Leu Ser Asn Gly Lys Leu Tyr Ser Ala Gly Ala Gly		
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Gly Asp Ala Gly Ala His Gly Gly Pro Gln Arg Leu Leu Asp Asp Pro		895
	900	905
Gly Pro Pro Gly Gly Pro Arg Pro Gln Ala Pro Thr Pro Cys Thr His		910
	915	920
Val Arg Val Cys Gln Glu Cys Arg Arg Ile Gln Ala Leu Arg Ala Ser		925
	930	935
Gly Ala Gly Ala Pro Pro Arg Gly Leu Gly Thr Pro Ala Glu Ala Thr		940
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Ser Pro Pro Arg Pro Arg Pro Gly Pro Thr Gly Pro Arg Glu Leu Thr		960
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Glu His Glu		

<210> 115

<211> 1792

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (8).. (1666)

<400> 115

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cgg cgc tcc ggg ttg gag tca tcc tcg gig cgg ccg ctg tgg ctg ctg 97
Arg Arg Ser Gly Leu Glu Ser Ser Ser Val Arg Pro Leu Trp Leu Leu
      15              20              25              30
ctg ctg ttc ctg ctg gca gcc gtg cgg cca gtg cgc gcc tgg gag agc 145
Leu Leu Phe Leu Leu Ala Ala Val Arg Pro Val Arg Ala Trp Glu Ser
              35              40              45
gga gac ctg gag ttg ttc gac ttg gtg gaa gag gtg cag ttg aac ttc 193
Gly Asp Leu Glu Leu Phe Asp Leu Val Glu Glu Val Gln Leu Asn Phe
              50              55              60
tac gag ttc ctc ggg gtg cag cag gat gct tca tct gca gac atc aga 241
Tyr Glu Phe Leu Gly Val Gln Gln Asp Ala Ser Ser Ala Asp Ile Arg
              65              70              75
aaa gca tat cgt aag ctt tca cta acc tta cat cca gac aag aat aaa 289
Lys Ala Tyr Arg Lys Leu Ser Leu Thr Leu His Pro Asp Lys Asn Lys
              80              85              90
gat gaa aat gca gaa act caa ttt aga caa ttg gtg gcc att tat gaa 337
Asp Glu Asn Ala Glu Thr Gln Phe Arg Gln Leu Val Ala Ile Tyr Glu
              95              100              105              110
gtt tta aag gat gat gaa aga agg cag agg tat gat gat gtt ctg atc 385
Val Leu Lys Asp Asp Glu Arg Arg Gln Arg Tyr Asp Asp Val Leu Ile
              115              120              125
aat gga ctt cca gat tgg cga cag cct gta ttc tac tac agg cga gtg 433
Asn Gly Leu Pro Asp Trp Arg Gln Pro Val Phe Tyr Tyr Arg Arg Val
              130              135              140
aga aaa atg agc aat gct gag ctg gct ttg ctc ttg ttc att att ctc 481
Arg Lys Met Ser Asn Ala Glu Leu Ala Leu Leu Leu Phe Ile Ile Leu

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aca gtg ggt cac tat gct gtg gtt tgg tcc atc tac ctg gaa aag caa	529		
Thr Val Gly His Tyr Ala Val Val Trp Ser Ile Tyr Leu Glu Lys Gln			
160	165	170	
ctg gat gaa ctg ctt ggt aga aaa aag aga gaa agg aag aag aag aca	577		
Leu Asp Glu Leu Leu Gly Arg Lys Lys Arg Glu Arg Lys Lys Lys Thr			
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gga agc aag agt gtg gac gca gca aaa ctt ggt gct tct gaa aag aac	625		
Gly Ser Lys Ser Val Asp Ala Ala Lys Leu Gly Ala Ser Glu Lys Asn			
195	200	205	
gaa aga ttg ctt ata aaa cca caa tgg cat gat ttg ctt cca tgc aaa	673		
Glu Arg Leu Leu Ile Lys Pro Gln Trp His Asp Leu Leu Pro Cys Lys			
210	215	220	
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Leu Gly Ile Trp Phe Cys Leu Thr Leu Lys Ala Leu Pro His Leu Ile			
225	230	235	
cag gat gct ggg cag ttt tat gca aaa tat aag gag aca aaa ttg aag	769		
Gln Asp Ala Gly Gln Phe Tyr Ala Lys Tyr Lys Glu Thr Lys Leu Lys			
240	245	250	
gaa aaa gaa gac gca ctg gct aga att gaa att gaa acc ctt caa aaa	817		
Glu Lys Glu Asp Ala Leu Ala Arg Ile Glu Ile Glu Thr Leu Gln Lys			
255	260	265	270
cag aag aaa gtt aaa gtt aaa aaa cca aaa cca gaa ttt cct gtg tat	865		
Gln Lys Lys Val Lys Val Lys Lys Pro Lys Pro Glu Phe Pro Val Tyr			
275	280	285	
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Met Pro Leu Glu Asn Thr Tyr Ile Gln Ser Tyr Asp His Gly Thr Ser			
290	295	300	
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 Arg Thr Gln Lys Arg Gln Ala Pro Glu Trp Thr Glu Glu Asp Leu Ser
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 caa ctg aca aga agt atg gti aag ttc cca gga ggg act cca ggt cga 1057
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 335 340 345 350
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 Gln Glu Ser Ala Thr Thr Glu Ala Arg Pro Arg Arg Arg Lys Ser Ala
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 agg gcg gcc gag gct gla acc aga gtg gag cca gag gag aag ctg aga 1393
 Arg Ala Ala Glu Ala Val Thr Arg Val Glu Pro Glu Glu Lys Leu Arg
 450 455 460

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 Asp Glu Glu Lys Gln Arg Lys Glu Arg Thr Arg Ala Ala Glu Glu Ala
 480 485 490
 tgg act cag agt cag cag aaa ctt ctg gaa ttg gca tta cag caa tac 1537
 Trp Thr Gln Ser Gln Gln Lys Leu Leu Glu Leu Ala Leu Gln Gln Tyr
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 tct aag agt aag gaa gac tgc att gct aga tac aag ctg ctg gtt gaa 1633
 Ser Lys Ser Lys Glu Asp Cys Ile Ala Arg Tyr Lys Leu Leu Val Glu
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 Leu Val Gln Lys Lys Lys Gln Ala Lys Ser
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<211> 552

<212> PRT

<213> Mus musculus

<400> 116

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Leu Glu Leu Phe Asp Leu Val Glu Glu Val Gln Leu Asn Phe Tyr Glu			
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Tyr Arg Lys Leu Ser Leu Thr Leu His Pro Asp Lys Asn Lys Asp Glu			
85	90	95	
Asn Ala Glu Thr Gln Phe Arg Gln Leu Val Ala Ile Tyr Glu Val Leu			
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Lys Asp Asp Glu Arg Arg Gln Arg Tyr Asp Asp Val Leu Ile Asn Gly			
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Gly His Tyr Ala Val Val Trp Ser Ile Tyr Leu Glu Lys Gln Leu Asp			
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Glu Leu Leu Gly Arg Lys Lys Arg Glu Arg Lys Lys Lys Thr Gly Ser			
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Lys Ser Val Asp Ala Ala Lys Leu Gly Ala Ser Glu Lys Asn Glu Arg			
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Ile Trp Phe Cys Leu Thr Leu Lys Ala Leu Pro His Leu Ile Gln Asp			
225	230	235	240

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 Glu Asp Ala Leu Ala Arg Ile Glu Ile Glu Thr Leu Gln Lys Gln Lys
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 Lys Val Lys Val Lys Lys Pro Lys Pro Glu Phe Pro Val Tyr Met Pro
 275 280 285
 Leu Glu Asn Thr Tyr Ile Gln Ser Tyr Asp His Gly Thr Ser Ile Glu
 290 295 300
 Glu Ile Glu Glu Gln Met Asp Asp Trp Leu Glu Asn Arg Lys Arg Thr
 305 310 315 320
 Gln Lys Arg Gln Ala Pro Glu Trp Thr Glu Glu Asp Leu Ser Gln Leu
 325 330 335
 Thr Arg Ser Met Val Lys Phe Pro Gly Gly Thr Pro Gly Arg Trp Asp
 340 345 350
 Lys Ile Ala His Glu Leu Gly Arg Ser Val Thr Asp Val Thr Thr Lys
 355 360 365
 Ala Lys Glu Leu Lys Asp Ser Val Thr Ser Ser Pro Gly Met Thr Arg
 370 375 380
 Leu Ser Glu Leu Lys Ser Asn Gly Gln Asn Ser Arg Pro Ile Lys Ile
 385 390 395 400
 Ala Thr Ala Leu Pro Asp Asp Ile Ile Thr Gln Arg Glu Asp Ser Ala
 405 410 415
 Gly Ala Met Glu Asp Glu Glu His Glu Ala Ala Glu Gly Glu Gln Glu
 420 425 430
 Ser Ala Thr Thr Glu Ala Arg Pro Arg Arg Arg Lys Ser Ala Arg Ala
 435 440 445
 Ala Glu Ala Val Thr Arg Val Glu Pro Glu Glu Lys Leu Arg Gly Lys
 450 455 460
 Arg Gln Lys Asp Phe Asp Ile Ser Glu Gln Asn Asp Ser Ser Asp Glu

465 470 475 480
 Glu Lys Gln Arg Lys Glu Arg Thr Arg Ala Ala Glu Glu Ala Trp Thr
 485 490 495
 Gln Ser Gln Gln Lys Leu Leu Glu Leu Ala Leu Gln Gln Tyr Pro Lys
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 Gly Ala Ser Asp Arg Trp Asp Lys Ile Ala Lys Cys Val Pro Ser Lys
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 Gln Lys Lys Lys Gln Ala Lys Ser
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<210> 117

<211> 1634

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (21).. (1271)

<400> 117

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Glu Phe Tyr Asn Leu Leu Arg Phe Arg Met Gly Gly Arg Arg Asn Phe

15

20

25

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Ile Pro Lys Met Asp Gln Asp Ser Leu Ser Ser Ser Leu Lys Thr Cys
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 tac aag tat ctc aat cag acc agt cgc agc ttt gcc gcg gtt atc cag 197
 Tyr Lys Tyr Leu Asn Gln Thr Ser Arg Ser Phe Ala Ala Val Ile Gln
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 gcg ctg gat ggg gac ata cgg cac gcc ata tgt gtg ttc tac ctg gtt 245
 Ala Leu Asp Gly Asp Ile Arg His Ala Ile Cys Val Phe Tyr Leu Val
 60 65 70 75
 ctc cga gcc ctg gat aca gtg gag gat gac atg agc atc agt gtg gag 293
 Leu Arg Ala Leu Asp Thr Val Glu Asp Asp Met Ser Ile Ser Val Glu
 80 85 90
 aag aag atc cca ctg ctg tgt aac ttc cac act ttc ctc tat gac cca 341
 Lys Lys Ile Pro Leu Leu Cys Asn Phe His Thr Phe Leu Tyr Asp Pro
 95 100 105
 gag tgg cgg ttc act gag agc aag gag aag gac cga caa gtg ctg gag 389
 Glu Trp Arg Phe Thr Glu Ser Lys Glu Lys Asp Arg Gln Val Leu Glu
 110 115 120
 gac ttc ccc acg atc tcc ctg gag ttt aga aat ttg gct gag aaa tat 437
 Asp Phe Pro Thr Ile Ser Leu Glu Phe Arg Asn Leu Ala Glu Lys Tyr
 125 130 135
 caa aca gtg atc gat gac atc tgc cac cag atg ggg tgt ggg atg gca 485
 Gln Thr Val Ile Asp Asp Ile Cys His Gln Met Gly Cys Gly Met Ala
 140 145 150 155
 gaa ttt gta gac aag gat gtg acc tcc aaa cag gac tgg gac aag tac 533
 Glu Phe Val Asp Lys Asp Val Thr Ser Lys Gln Asp Trp Asp Lys Tyr
 160 165 170
 tgc cac tac gtt gct ggg ctg gtg gga att ggc ctt tct cgt cta ttc 581
 Cys His Tyr Val Ala Gly Leu Val Gly Ile Gly Leu Ser Arg Leu Phe
 175 180 185

tct gcc tca gag ttt gaa gac ccc ata gtt ggt gaa gac ata gag tgt 629
 Ser Ala Ser Glu Phe Glu Asp Pro Ile Val Gly Glu Asp Ile Glu Cys
 190 195 200
 gcc aac tca atg ggt ctg ttc ctg cag aaa aca aat atc att cgt gat 677
 Ala Asn Ser Met Gly Leu Phe Leu Gln Lys Thr Asn Ile Ile Arg Asp
 205 210 215
 tat ctg gaa gac caa cag gaa gga agg aag ttt tgg cct cag gag gtg 725
 Tyr Leu Glu Asp Gln Gln Glu Gly Arg Lys Phe Trp Pro Gln Glu Val
 220 225 230 235
 tgg ggc aga tac att aag aag ttg gaa gac ttt gct aag cca gag aac 773
 Trp Gly Arg Tyr Ile Lys Lys Leu Glu Asp Phe Ala Lys Pro Glu Asn
 240 245 250
 gta gat gtg gcc gtg cag tgc ttg aat gaa ctc ata acc aac acc cta 821
 Val Asp Val Ala Val Gln Cys Leu Asn Glu Leu Ile Thr Asn Thr Leu
 255 260 265
 cag cac atc cct gac gtc ctc acc tac ctg tca agg ctc cgg aac cag 869
 Gln His Ile Pro Asp Val Leu Thr Tyr Leu Ser Arg Leu Arg Asn Gln
 270 275 280
 agt gtg ttt aac ttc tgt gct att cca cag gta atg gcc att gcc aca 917
 Ser Val Phe Asn Phe Cys Ala Ile Pro Gln Val Met Ala Ile Ala Thr
 285 290 295
 ctg gct gcc tgt tac aat aac cag cag gta ttc aaa gga gta gtg aag 965
 Leu Ala Ala Cys Tyr Asn Asn Gln Gln Val Phe Lys Gly Val Val Lys
 300 305 310 315
 att cgg aag ggg caa gca gtc acc ctc atg atg gat gcc acc aac atg 1013
 Ile Arg Lys Gly Gln Ala Val Thr Leu Met Met Asp Ala Thr Asn Met
 320 325 330
 cct gcc gtc aaa gct atc ata tac cag tac ata gaa gag att tat cac 1061
 Pro Ala Val Lys Ala Ile Ile Tyr Gln Tyr Ile Glu Glu Ile Tyr His

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          335              340              345
cgg atc ccc aac tca gac cca tca tca agc aaa acc aag cag gtc atc 1109
Arg Ile Pro Asn Ser Asp Pro Ser Ser Ser Lys Thr Lys Gln Val Ile

          350              355              360
tcc aag atc agg aca cag aac ctt ccc aac tgc cag ctc atc tcc cga 1157
Ser Lys Ile Arg Thr Gln Asn Leu Pro Asn Cys Gln Leu Ile Ser Arg

          365              370              375
agc cac tac tgc ccc att tac ctg tca ttt atc atg ctc ttg gct gcc 1205
Ser His Tyr Ser Pro Ile Tyr Leu Ser Phe Ile Met Leu Leu Ala Ala

          380              385              390              395
ctg agc tgg cag tac ctg agc acc ctg tcc cag gtc aca gaa gac tat 1253
Leu Ser Trp Gln Tyr Leu Ser Thr Leu Ser Gln Val Thr Glu Asp Tyr

          400              405              410
gtc cag aga gaa cac tga tttgttttag ccggaagtgg aagttccgt 1301
Val Gln Arg Glu His

          415
ggagtgggtt tttccttttc ctccagctgg attttgactt cccttgtttt tcctcctact 1361
ctaaaatctt tgggagaact gagtgtggga cctttaggaa ctgggagagg aaaggatgcc 1421
ttgccctcag cagcctggtg ctggctggga ctiggttcct ctgcctcttg tagccactgg 1481
cagcgtgccg actgctgcac ttgtgaggcc acgtgtgatg gtcacaagag cctagtgaac 1541
ctggctagaa tgctgattgg atttatitaa ttigaaacag ccttgaata cctatgacaa 1601
tagaaaatga aagcaaaaaa aaaaaaaaaa aaa 1634

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<210> 118

<211> 416

<212> PRT

<213> Mus musculus

<400> 118

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 1. 5 10 15
 Leu Arg Phe Arg Met Gly Gly Arg Arg Asn Phe Ile Pro Lys Met Asp
 20 25 30
 Gln Asp Ser Leu Ser Ser Ser Leu Lys Thr Cys Tyr Lys Tyr Leu Asn
 35 40 45
 Gln Thr Ser Arg Ser Phe Ala Ala Val Ile Gln Ala Leu Asp Gly Asp
 50 55 60
 Ile Arg His Ala Ile Cys Val Phe Tyr Leu Val Leu Arg Ala Leu Asp
 65 70 75 80
 Thr Val Glu Asp Asp Met Ser Ile Ser Val Glu Lys Lys Ile Pro Leu
 85 90 95
 Leu Cys Asn Phe His Thr Phe Leu Tyr Asp Pro Glu Trp Arg Phe Thr
 100 105 110
 Glu Ser Lys Glu Lys Asp Arg Gln Val Leu Glu Asp Phe Pro Thr Ile
 115 120 125
 Ser Leu Glu Phe Arg Asn Leu Ala Glu Lys Tyr Gln Thr Val Ile Asp
 130 135 140
 Asp Ile Cys His Gln Met Gly Cys Gly Met Ala Glu Phe Val Asp Lys
 145 150 155 160
 Asp Val Thr Ser Lys Gln Asp Trp Asp Lys Tyr Cys His Tyr Val Ala
 165 170 175
 Gly Leu Val Gly Ile Gly Leu Ser Arg Leu Phe Ser Ala Ser Glu Phe
 180 185 190
 Glu Asp Pro Ile Val Gly Glu Asp Ile Glu Cys Ala Asn Ser Met Gly
 195 200 205
 Leu Phe Leu Gln Lys Thr Asn Ile Ile Arg Asp Tyr Leu Glu Asp Gln
 210 215 220
 Gln Glu Gly Arg Lys Phe Trp Pro Gln Glu Val Trp Gly Arg Tyr Ile

225	230	235	240
Lys Lys Leu Glu Asp Phe Ala Lys Pro Glu Asn Val Asp Val Ala Val			
	245	250	255
Gln Cys Leu Asn Glu Leu Ile Thr Asn Thr Leu Gln His Ile Pro Asp			
	260	265	270
Val Leu Thr Tyr Leu Ser Arg Leu Arg Asn Gln Ser Val Phe Asn Phe			
	275	280	285
Cys Ala Ile Pro Gln Val Met Ala Ile Ala Thr Leu Ala Ala Cys Tyr			
	290	295	300
Asn Asn Gln Gln Val Phe Lys Gly Val Val Lys Ile Arg Lys Gly Gln			
305	310	315	320
Ala Val Thr Leu Met Met Asp Ala Thr Asn Met Pro Ala Val Lys Ala			
	325	330	335
Ile Ile Tyr Gln Tyr Ile Glu Glu Ile Tyr His Arg Ile Pro Asn Ser			
	340	345	350
Asp Pro Ser Ser Ser Lys Thr Lys Gln Val Ile Ser Lys Ile Arg Thr			
	355	360	365
Gln Asn Leu Pro Asn Cys Gln Leu Ile Ser Arg Ser His Tyr Ser Pro			
	370	375	380
Ile Tyr Leu Ser Phe Ile Met Leu Leu Ala Ala Leu Ser Trp Gln Tyr			
385	390	395	400
Leu Ser Thr Leu Ser Gln Val Thr Glu Asp Tyr Val Gln Arg Glu His			
	405	410	415

<210> 119

<211> 183

<212> DNA

<213> Mus musculus

<400> 119

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 cgtcatggtg tcccaccgtt ctgagcaaac tgaggacact gtcacgcag acctgggtgg 120
 tgiggctctg cactgggcag atcaatgact ggatgcccct tgaggattcg agcgtgtgag 180
 caa 183

<210> 120

<211> 920

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (132).. (701)

<400> 120

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 cccaccccaa g atg gtg acc atg ctg atg ttc ctg gcc acg ctg gcg ggt 170
 Met Val Thr Met Leu Met Phe Leu Ala Thr Leu Ala Gly

1

5

10

ctc ttc acc aca gcc aaa gga caa aat ttc cat ctt ggg aaa tgc ccg 218
 Leu Phe Thr Thr Ala Lys Gly Gln Asn Phe His Leu Gly Lys Cys Pro

15

20

25

tct cct cct gtg caa gag aat ttt gac gtg aaa aag tat ctt gga aga 266
 Ser Pro Pro Val Gln Glu Asn Phe Asp Val Lys Lys Tyr Leu Gly Arg

30

35

40

45

tgg tac gaa att gag aag atc cca gcg agc ttt gag aaa gga aac tgc 314
 Trp Tyr Glu Ile Glu Lys Ile Pro Ala Ser Phe Glu Lys Gly Asn Cys

50	55	60	
att caa gcc aac tac tgc ctg atg gag aac gga aac atc gaa gtg cta			362
Ile Gln Ala Asn Tyr Ser Leu Met Glu Asn Gly Asn Ile Glu Val Leu			
65	70	75	
aac aag gag ctg agt cct gat gga acc atg aac caa gta aag ggt gaa			410
Asn Lys Glu Leu Ser Pro Asp Gly Thr Met Asn Gln Val Lys Gly Glu			
80	85	90	
gcc aaa cag agc aac gtc tca gag cca gcc aag ctg gaa gtc cag ttc			458
Ala Lys Gln Ser Asn Val Ser Glu Pro Ala Lys Leu Glu Val Gln Phe			
95	100	105	
ttc ccg ttg atg cca ccg gca ccc tac tgg atc ctg gcc act gat tat			506
Phe Pro Leu Met Pro Pro Ala Pro Tyr Trp Ile Leu Ala Thr Asp Tyr			
110	115	120	125
gaa aac tat gcc ctc gtc tac tcc tgc acc acc ttc ttc tgg ctc ttc			554
Glu Asn Tyr Ala Leu Val Tyr Ser Cys Thr Thr Phe Phe Trp Leu Phe			
130	135	140	
cat gtg gat ttt gtt tgg att ctt gga aga aat cct tat ctc cct cca			602
His Val Asp Phe Val Trp Ile Leu Gly Arg Asn Pro Tyr Leu Pro Pro			
145	150	155	
gaa aca ata acc tac cta aaa gat atc ctt act tct aat ggc atc gac			650
Glu Thr Ile Thr Tyr Leu Lys Asp Ile Leu Thr Ser Asn Gly Ile Asp			
160	165	170	
atc gaa aaa atg aca aca aca gat caa gcg aac tgc ccg gac ttc ctg			698
Ile Glu Lys Met Thr Thr Thr Asp Gln Ala Asn Cys Pro Asp Phe Leu			
175	180	185	
taa agggggcggg ggcgaaaacc acaccagggtt atttctttgc ttgctgttc			751
190			
ctggctccac cccacgcct cgtaaggacc aagcaaccat ggcaggcact agaggagag			811
taaggctata gaagccaatg gagggagggg actcatggaa agttggccca aacccaacct			
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gacccacac tgcaccttg ctaccccaat aataaacatt ttgctgac

920

<210> 121

<211> 189

<212> PRT

<213> Mus musculus

<400> 121

Met	Val	Thr	Met	Leu	Met	Phe	Leu	Ala	Thr	Leu	Ala	Gly	Leu	Phe	Thr
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Thr	Ala	Lys	Gly	Gln	Asn	Phe	His	Leu	Gly	Lys	Cys	Pro	Ser	Pro	Pro
			20					25					30		
Val	Gln	Glu	Asn	Phe	Asp	Val	Lys	Lys	Tyr	Leu	Gly	Arg	Trp	Tyr	Glu
	35					40					45				
Ile	Glu	Lys	Ile	Pro	Ala	Ser	Phe	Glu	Lys	Gly	Asn	Cys	Ile	Gln	Ala
	50					55					60				
Asn	Tyr	Ser	Leu	Met	Glu	Asn	Gly	Asn	Ile	Glu	Val	Leu	Asn	Lys	Glu
	65				70					75				80	
Leu	Ser	Pro	Asp	Gly	Thr	Met	Asn	Gln	Val	Lys	Gly	Glu	Ala	Lys	Gln
			85					90					95		
Ser	Asn	Val	Ser	Glu	Pro	Ala	Lys	Leu	Glu	Val	Gln	Phe	Phe	Pro	Leu
		100						105					110		
Met	Pro	Pro	Ala	Pro	Tyr	Trp	Ile	Leu	Ala	Thr	Asp	Tyr	Glu	Asn	Tyr
	115						120					125			
Ala	Leu	Val	Tyr	Ser	Cys	Thr	Thr	Phe	Phe	Trp	Leu	Phe	His	Val	Asp
	130					135				140					
Phe	Val	Trp	Ile	Leu	Gly	Arg	Asn	Pro	Tyr	Leu	Pro	Pro	Glu	Thr	Ile
	145				150					155				160	
Thr	Tyr	Leu	Lys	Asp	Ile	Leu	Thr	Ser	Asn	Gly	Ile	Asp	Ile	Glu	Lys

165 170 175
 Met Thr Thr Thr Asp Gln Ala Asn Cys Pro Asp Phe Leu
 180 185

<210> 122

<211> 2129

<212> DNA

<213> Mus musculus

<400> 122

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 cagaagagga caagttagag caaatcaaaa aatgggcaga gaagttagac cggctaacga 180
 gtagagcaac aaaagaccca gaggggtttg ttgggcatcc tgtaaagca ttcaagttaa 240
 tgaaacgtct gaacactgag tggagtgagt tggagaatct gatcctcaag gacatgtcgg 300
 atggcttcat ctctaacctt accattcaga ggcagtactt ccctaattgat gaagatcagg 360
 ttggagctgc taaagctctg tticggctgc aagacaccta caatctggac acaaataaca 420
 tctcaaaggg gaatcttcca ggagtgcaac ataagtcttt cctgacagct gaggactgct 480
 ttgagctggg caaagtggcc tatacagagg cagattatta ccacacggaa ctgtggatgg 540
 agcaggctct gacgcagctg gaggagggag agctgtctac tgtagataaa gtctctgttc 600
 tggattacct gagctatgcg gtgtaccagc agggagacct ggataaggcg cttctcctca 660
 ccaagaagct tcttgagcta gatcctgaac atcagagagc taatggtaac ttagtatatt 720
 ttgaatatat aatgagtaaa gaaaaagatg ccaataagtc agcgtcgggc gaccaatctg 780
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gctacgaaga ccctgtggta tcccgaatta atatgagaat acaagatctc acaggactgg 1200
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 gaaacaaatg ggtatccaac aaatggctcc atgaacgtgg acaagaattt cgaaggccgt 1560
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 catgcagacg ccagtgtgct gctcttccga tgigtggact gctgagcact ggtaactaac 2040
 tagggcccag tcaggtctgc tatccacgt gcagagttcc tattatttaa agaaactctt 2100
 tttatcaaat cccctctctc accacgggt 2129

<210> 123

<211> 397

<212> DNA

<213> Mus musculus

<400> 123

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 atgatttgtg cggggaacct tcagaagccc ggatcagaca cctgccaggg tgactcgggg 180
 ggccctctaa cctgtgagaa ggatggaact tactacgtct acgggattgt aagctggggc 240
 caggaatgtg ggaagaagcc aggagtctac actcaagtca ccaagttcct gaattggata 300

aagaccacca tgcacagga ggctggcctc tgaggtgctg tctgcagagc cttgaagccc 360
 ctcgtcttta gcaccaaaca agaggggctt cctgcgt 397

<210> 124

<211> 1519

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (120).. (656)

<400> 124

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 tcttcgtccg agtctctccc gctgtgggca gctcagacgc cgaagctcta actgcagct 119
 atg agc agc aac gaa tgc ttc aag tgt gga cga tct ggc cac tgg gcc 167
 Met Ser Ser Asn Glu Cys Phe Lys Cys Gly Arg Ser Gly His Trp Ala
 1 5 10 15
 agg gag tgc cct act ggt gga ggt cgg ggt cgt gga atg aga agc cgc 215
 Arg Glu Cys Pro Thr Gly Gly Gly Arg Gly Arg Gly Met Arg Ser Arg
 20 25 30
 ggc aga ggt ggt ttt acc tcg gat aga ggg ttc cag ttt gtt tcc tcg 263
 Gly Arg Gly Gly Phe Thr Ser Asp Arg Gly Phe Gln Phe Val Ser Ser
 35 40 45
 tct ctc cct gac atc tgc tac cgc tgt ggt gag tct ggt cat ctt gcc 311
 Ser Leu Pro Asp Ile Cys Tyr Arg Cys Gly Glu Ser Gly His Leu Ala
 50 55 60
 aag gat tgt gat ctg cag gag gat gaa gcc tgc tat aac tgc ggt aga 359
 Lys Asp Cys Asp Leu Gln Glu Asp Glu Ala Cys Tyr Asn Cys Gly Arg

65	70	75	80	
ggt ggc cac att gcc aag gac tgc aag gag ccc aag aga gag cga gag	407			
Gly Gly His Ile Ala Lys Asp Cys Lys Glu Pro Lys Arg Glu Arg Glu				
85	90	95		
caa tgc tgc tac aat tgt ggc aag cca ggc cat ctg gct cgt gac tgt	455			
Gln Cys Cys Tyr Asn Cys Gly Lys Pro Gly His Leu Ala Arg Asp Cys				
100	105	110		
gac cac gcg gat gag cag aag tgc tat tct tgt ggt gaa ttt gga cat	503			
Asp His Ala Asp Glu Gln Lys Cys Tyr Ser Cys Gly Glu Phe Gly His				
115	120	125		
att caa aaa gac tgc acc aag gtg aag tgc tat agg tgt ggt gaa act	551			
Ile Gln Lys Asp Cys Thr Lys Val Lys Cys Tyr Arg Cys Gly Glu Thr				
130	135	140		
ggt cat gla gcc atc aat tgc agc aag aca agt gaa gtc aac tgt tac	599			
Gly His Val Ala Ile Asn Cys Ser Lys Thr Ser Glu Val Asn Cys Tyr				
145	150	155	160	
cgc tgt ggc gag tca ggg cat ctt gca cgg gaa tgc aca att gag gct	647			
Arg Cys Gly Glu Ser Gly His Leu Ala Arg Glu Cys Thr Ile Glu Ala				
165	170	175		
aca gcc taa ttattttcct ttgtcgcccc tcctttttct gattgatggt	696			
Thr Ala				
tgtattattt tctctgaatc ctcttcactg gccaaagggtt ggcagataga ggctgttccc	756			
aggccagtga gccttacttg cagtgtaaaa ggaggaaagg ggtggaaaaa accgaatttc	816			
tgcatttaac tacaaaaaaa gtttatgttt agtttggtag aggtgttatg tataatgctt	876			
tgttaaagaa ccccccttcc gtgccactgg tgaataggga ttaatgaatg ggaagagttc	936			
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tctggaagca tctaagcttc cataaataac tttaattcctt agcataatga cggccttgga	1056			
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tatacagttg agttgggagt aaactgaaaa gacaaatgtg ttgaagctat gccagggaat	1176			

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 gctgtaatca gtttttaaaa gtcagatgga aaaagcaact gaagtcctag aaaatagaaa 1476
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<210> 125

<211> 178

<212> PRT

<213> Mus musculus

<400> 125

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Arg	Glu	Cys	Pro	Thr	Gly	Gly	Gly	Arg	Gly	Arg	Gly	Met	Arg	Ser	Arg
				20				25						30	
Gly	Arg	Gly	Gly	Phe	Thr	Ser	Asp	Arg	Gly	Phe	Gln	Phe	Val	Ser	Ser
		35						40						45	
Ser	Leu	Pro	Asp	Ile	Cys	Tyr	Arg	Cys	Gly	Glu	Ser	Gly	His	Leu	Ala
		50					55					60			
Lys	Asp	Cys	Asp	Leu	Gln	Glu	Asp	Glu	Ala	Cys	Tyr	Asn	Cys	Gly	Arg
		65				70						75			80
Gly	Gly	His	Ile	Ala	Lys	Asp	Cys	Lys	Glu	Pro	Lys	Arg	Glu	Arg	Glu
				85						90					95
Gln	Cys	Cys	Tyr	Asn	Cys	Gly	Lys	Pro	Gly	His	Leu	Ala	Arg	Asp	Cys
				100						105					110
Asp	His	Ala	Asp	Glu	Gln	Lys	Cys	Tyr	Ser	Cys	Gly	Glu	Phe	Gly	His
				115											125

Ile Gln Lys Asp Cys Thr Lys Val Lys Cys Tyr Arg Cys Gly Glu Thr

130

135

140

Gly His Val Ala Ile Asn Cys Ser Lys Thr Ser Glu Val Asn Cys Tyr

145

150

155

160

Arg Cys Gly Glu Ser Gly His Leu Ala Arg Glu Cys Thr Ile Glu Ala

165

170

175

Thr Ala

<210> 126

<211> 2080

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (56).. (1687)

<400> 126

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Met

1

gag cag gtg aat gag cta aag gag aag ggc aat aag gcc ctg agt gct 106

Glu Gln Val Asn Glu Leu Lys Glu Lys Gly Asn Lys Ala Leu Ser Ala

5

10

15

ggg aac att gat gat gcc tta cag tgc tac tct gag gca att aaa cta 154

Gly Asn Ile Asp Asp Ala Leu Gln Cys Tyr Ser Glu Ala Ile Lys Leu

20

25

30

gat ccc cag aac cat gtg ctc tac agc aat cgc tct gca gcc tac gcc 202

Asp Pro Gln Asn His Val Leu Tyr Ser Asn Arg Ser Ala Ala Tyr Ala

35	40	45	
aag aaa gga gac tac cag aag gcc tat gag gac ggc tgc aag act gtt	250		
Lys Lys Gly Asp Tyr Gln Lys Ala Tyr Glu Asp Gly Cys Lys Thr Val			
50	55	60	65
gac ctg aag cct gac tgg ggc aag ggt tat tca aga aaa gca gca gcc	298		
Asp Leu Lys Pro Asp Trp Gly Lys Gly Tyr Ser Arg Lys Ala Ala Ala			
70	75	80	
ctt gaa ttc cta aac cgg ttt gag gaa gcc aaa cga acc tat gaa gaa	346		
Leu Glu Phe Leu Asn Arg Phe Glu Glu Ala Lys Arg Thr Tyr Glu Glu			
85	90	95	
ggt tta aaa cat gaa gcc aat aat ctc cag ctt aag gag ggc ttg cag	394		
Gly Leu Lys His Glu Ala Asn Asn Leu Gln Leu Lys Glu Gly Leu Gln			
100	105	110	
aac atg gag gcc agg ttg gca gag agg aaa ttc atg aat cca ttc aac	442		
Asn Met Glu Ala Arg Leu Ala Glu Arg Lys Phe Met Asn Pro Phe Asn			
115	120	125	
ttg cct aat cta tac caa aag ttg gaa aac gac ccc agg aca agg tcg	490		
Leu Pro Asn Leu Tyr Gln Lys Leu Glu Asn Asp Pro Arg Thr Arg Ser			
130	135	140	145
ctg ctc agt gac ccc acc tac agg gag ctc ata gaa cag ctg cag aac	538		
Leu Leu Ser Asp Pro Thr Tyr Arg Glu Leu Ile Glu Gln Leu Gln Asn			
150	155	160	
aag ccg tca gac ctg ggc acg aaa cta cag gat ccc cgg gtg atg act	586		
Lys Pro Ser Asp Leu Gly Thr Lys Leu Gln Asp Pro Arg Val Met Thr			
165	170	175	
act ctg agt gtc ctc ctt ggg gtt gat ctg ggc agc atg gat gaa gag	634		
Thr Leu Ser Val Leu Leu Gly Val Asp Leu Gly Ser Met Asp Glu Glu			
180	185	190	
gaa gag gca gca aca ccc cca ccc cca cct cct ccc aaa aag gag ccc	682		

Glu Glu Ala Ala Thr Pro Pro Pro Pro Pro Pro Pro Lys Lys Glu Pro
 195 200 205
 aag cca gaa cca atg gaa gaa gat ctt cca gag aat aag aaa cag gca 730
 Lys Pro Glu Pro Met Glu Glu Asp Leu Pro Glu Asn Lys Lys Gln Ala
 210 215 220 225
 ctg aaa gag aag gag ctg gga aat gat gcc tac aag aag aaa gat ttt 778
 Leu Lys Glu Lys Glu Leu Gly Asn Asp Ala Tyr Lys Lys Lys Asp Phe
 230 235 240
 gac aag gcc ctg aag cat tat gac aga gcc aag gaa ctg gac cct acc 826
 Asp Lys Ala Leu Lys His Tyr Asp Arg Ala Lys Glu Leu Asp Pro Thr
 245 250 255
 aac atg acc tac ata act aat caa gca gct gtg cac ttt gag aag ggc 874
 Asn Met Thr Tyr Ile Thr Asn Gln Ala Ala Val His Phe Glu Lys Gly
 260 265 270
 gac tat aac aaa tgc cgg gag ctc tgt gag aag gcc att gaa gtg ggc 922
 Asp Tyr Asn Lys Cys Arg Glu Leu Cys Glu Lys Ala Ile Glu Val Gly
 275 280 285
 aga gag aac cga gag gac tac cgg cag atc gcc aaa gct tat gcc cga 970
 Arg Glu Asn Arg Glu Asp Tyr Arg Gln Ile Ala Lys Ala Tyr Ala Arg
 290 295 300 305
 att ggc aat tcc tat ttc aaa gaa gaa aag tac aag gat gct ata cat 1018
 Ile Gly Asn Ser Tyr Phe Lys Glu Glu Lys Tyr Lys Asp Ala Ile His
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 ttc tac aac aag tct cta gca gag cac cga acc cca gat gtg ctc aag 1066
 Phe Tyr Asn Lys Ser Leu Ala Glu His Arg Thr Pro Asp Val Leu Lys
 325 330 335
 aag tgc cag cag gca gag aaa att ctg aag gaa cag gag cgc ttg gct 1114
 Lys Cys Gln Gln Ala Glu Lys Ile Leu Lys Glu Gln Glu Arg Leu Ala
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Tyr Ile Asn Pro Asp Leu Ala Leu Glu Glu Lys Asn Lys Gly Asn Glu	
355 360 365	
tgc ttc cag aaa ggg gac tac ccc caa gcc atg aag cac tat aca gaa	1210
Cys Phe Gln Lys Gly Asp Tyr Pro Gln Ala Met Lys His Tyr Thr Glu	
370 375 380 385	
gcc att aaa agg aac ccg aga gat gcc aaa ctg tac agc aac cga gct	1258
Ala Ile Lys Arg Asn Pro Arg Asp Ala Lys Leu Tyr Ser Asn Arg Ala	
390 395 400	
gcc tgc tac acc aag ctc ctg gag ttt cag ctg gca ctc aag gac tgt	1306
Ala Cys Tyr Thr Lys Leu Leu Glu Phe Gln Leu Ala Leu Lys Asp Cys	
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Glu Glu Cys Ile Gln Leu Glu Pro Thr Phe Ile Lys Gly Tyr Thr Arg	
420 425 430	
aaa gca gct gct ctg gaa gcc atg aag gac tat aca aaa gcc atg gat	1402
Lys Ala Ala Ala Leu Glu Ala Met Lys Asp Tyr Thr Lys Ala Met Asp	
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gtg tac caa aaa gcg tta gac ctg gac tcc agc tgt aag gaa gca gca	1450
Val Tyr Gln Lys Ala Leu Asp Leu Asp Ser Ser Cys Lys Glu Ala Ala	
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Asp Gly Tyr Gln Arg Cys Met Met Ala Gln Tyr Asn Arg His Asp Ser	
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Pro Glu Asp Val Lys Arg Arg Ala Met Ala Asp Pro Glu Val Gln Gln	
485 490 495	
ata atg agt gac cca gcc atg aga ctc atc ctg gag cag atg caa aag	1594
Ile Met Ser Asp Pro Ala Met Arg Leu Ile Leu Glu Gln Met Gln Lys	

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 Asp Pro Gln Ala Leu Ser Glu His Leu Lys Asn Pro Val Ile Ala Gln
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 aag atc cag aag ctg atg gat gtg ggt ctc atc gca att cgg tga 1687
 Lys Ile Gln Lys Leu Met Asp Val Gly Leu Ile Ala Ile Arg
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 Ala Lys Lys Gly Asp Tyr Gln Lys Ala Tyr Glu Asp Gly Cys Lys Thr
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Val Asp Leu Lys Pro Asp Trp Gly Lys Gly Tyr Ser Arg Lys Ala Ala
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 Ala Leu Glu Phe Leu Asn Arg Phe Glu Glu Ala Lys Arg Thr Tyr Glu
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 Glu Gly Leu Lys His Glu Ala Asn Asn Leu Gln Leu Lys Glu Gly Leu
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 Gln Asn Met Glu Ala Arg Leu Ala Glu Arg Lys Phe Met Asn Pro Phe
 115 120 125
 Asn Leu Pro Asn Leu Tyr Gln Lys Leu Glu Asn Asp Pro Arg Thr Arg
 130 135 140
 Ser Leu Leu Ser Asp Pro Thr Tyr Arg Glu Leu Ile Glu Gln Leu Gln
 145 150 155 160
 Asn Lys Pro Ser Asp Leu Gly Thr Lys Leu Gln Asp Pro Arg Val Met
 165 170 175
 Thr Thr Leu Ser Val Leu Leu Gly Val Asp Leu Gly Ser Met Asp Glu
 180 185 190
 Glu Glu Glu Ala Ala Thr Pro Pro Pro Pro Pro Pro Pro Lys Lys Glu
 195 200 205
 Pro Lys Pro Glu Pro Met Glu Glu Asp Leu Pro Glu Asn Lys Lys Gln
 210 215 220
 Ala Leu Lys Glu Lys Glu Leu Gly Asn Asp Ala Tyr Lys Lys Lys Asp
 225 230 235 240
 Phe Asp Lys Ala Leu Lys His Tyr Asp Arg Ala Lys Glu Leu Asp Pro
 245 250 255
 Thr Asn Met Thr Tyr Ile Thr Asn Gln Ala Ala Val His Phe Glu Lys
 260 265 270
 Gly Asp Tyr Asn Lys Cys Arg Glu Leu Cys Glu Lys Ala Ile Glu Val
 275 280 285
 Gly Arg Glu Asn Arg Glu Asp Tyr Arg Gln Ile Ala Lys Ala Tyr Ala

290	295	300	
Arg Ile Gly Asn Ser Tyr Phe Lys Glu Glu Lys Tyr Lys Asp Ala Ile			
305	310	315	320
His Phe Tyr Asn Lys Ser Leu Ala Glu His Arg Thr Pro Asp Val Leu			
	325	330	335
Lys Lys Cys Gln Gln Ala Glu Lys Ile Leu Lys Glu Gln Glu Arg Leu			
	340	345	350
Ala Tyr Ile Asn Pro Asp Leu Ala Leu Glu Glu Lys Asn Lys Gly Asn			
	355	360	365
Glu Cys Phe Gln Lys Gly Asp Tyr Pro Gln Ala Met Lys His Tyr Thr			
	370	375	380
Glu Ala Ile Lys Arg Asn Pro Arg Asp Ala Lys Leu Tyr Ser Asn Arg			
385	390	395	400
Ala Ala Cys Tyr Thr Lys Leu Leu Glu Phe Gln Leu Ala Leu Lys Asp			
	405	410	415
Cys Glu Glu Cys Ile Gln Leu Glu Pro Thr Phe Ile Lys Gly Tyr Thr			
	420	425	430
Arg Lys Ala Ala Ala Leu Glu Ala Met Lys Asp Tyr Thr Lys Ala Met			
	435	440	445
Asp Val Tyr Gln Lys Ala Leu Asp Leu Asp Ser Ser Cys Lys Glu Ala			
	450	455	460
Ala Asp Gly Tyr Gln Arg Cys Met Met Ala Gln Tyr Asn Arg His Asp			
465	470	475	480
Ser Pro Glu Asp Val Lys Arg Arg Ala Met Ala Asp Pro Glu Val Gln			
	485	490	495
Gln Ile Met Ser Asp Pro Ala Met Arg Leu Ile Leu Glu Gln Met Gln			
	500	505	510
Lys Asp Pro Gln Ala Leu Ser Glu His Leu Lys Asn Pro Val Ile Ala			
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Gln Lys Ile Gln Lys Leu Met Asp Val Gly Leu Ile Ala Ile Arg

530

535

540

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 tcggtctccc gctaacttcc cccgcggggc tcggttgccc ggaccgctc ggctcgagcc 180
 cgccgcccggc tcgcttccc cgcacgcggc tcctccgtgc cggtcctcc gaaagtggat 240
 gagagagcgc gcggggcgcg cggcggcacg gagcgcggcg gc atg gag cgc ggc 294

Met Glu Arg Gly

1

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Cys Trp Ala Pro Arg Ala Leu Val Leu Ala Val Leu Leu Leu Leu Ala

5 10 15 20

acg ctg agg gcg cgc gcg gcc acc ggc tac tac ccg cgc ttc tcg cct 390

Thr Leu Arg Ala Arg Ala Ala Thr Gly Tyr Tyr Pro Arg Phe Ser Pro

25 30 35

ttc ttt ttc ctg tgc acc cac cac ggg gag ctg gaa ggg gat ggg gag 438

Phe Phe Phe Leu Cys Thr His His Gly Glu Leu Glu Gly Asp Gly Glu

40

45

50

cag ggc gag gtg ctc att tcc ctg cac att gcg ggc aac ccc acc tac	486
Gln Gly Glu Val Leu Ile Ser Leu His Ile Ala Gly Asn Pro Thr Tyr	
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tac gta ccg gga cag gaa tac cat gtt aca att tca aca agc acc ttc	534
Tyr Val Pro Gly Gln Glu Tyr His Val Thr Ile Ser Thr Ser Thr Phe	
70 75 80	
ttt gat ggc ttg ctg gtg acg gga ctc tat acc tcg aca agc atc cag	582
Phe Asp Gly Leu Leu Val Thr Gly Leu Tyr Thr Ser Thr Ser Ile Gln	
85 90 95 100	
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Ser Ser Gln Ser Ile Gly Gly Ser Ser Ala Phe Gly Phe Gly Ile Met	
105 110 115	
tcc gac cac cag ttt ggt aac cag ttt atg tgc agt gtg gtg gcc tct	678
Ser Asp His Gln Phe Gly Asn Gln Phe Met Cys Ser Val Val Ala Ser	
120 125 130	
cat gtg agt cac ctg cct aca acc aac ctc agc ttt gtc tgg att gcc	726
His Val Ser His Leu Pro Thr Thr Asn Leu Ser Phe Val Trp Ile Ala	
135 140 145	
cca cca gct ggc aca ggc tgt gtg aat ttc atg gct act gca aca cat	774
Pro Pro Ala Gly Thr Gly Cys Val Asn Phe Met Ala Thr Ala Thr His	
150 155 160	
agg ggc cag gtg att ttc aaa gac gca ctg gcc cag cag ctg tgt gaa	822
Arg Gly Gln Val Ile Phe Lys Asp Ala Leu Ala Gln Gln Leu Cys Glu	
165 170 175 180	
caa gga gct ccc aca gag gcc act gct tac tcg cac ctt gct gaa ata	870
Gln Gly Ala Pro Thr Glu Ala Thr Ala Tyr Ser His Leu Ala Glu Ile	
185 190 195	
cac agt gac agt gtg atc cta cga gat gac ttt gac tcc tac cag caa	918
His Ser Asp Ser Val Ile Leu Arg Asp Asp Phe Asp Ser Tyr Gln Gln	

200	205	210	
ctg gaa ttg aac ccc aac ata tgg gtt gaa tgc agc aac tgt gag atg	966		
Leu Glu Leu Asn Pro Asn Ile Trp Val Glu Cys Ser Asn Cys Glu Met			
215	220	225	
gga gag cag tgt ggc acc atc atg cat ggc aat gct gtc acc ttc tgt	1014		
Gly Glu Gln Cys Gly Thr Ile Met His Gly Asn Ala Val Thr Phe Cys			
230	235	240	
gag ccg tac ggc cct cga gag ctg acc acc aca tgc ctg aac aca aca	1062		
Glu Pro Tyr Gly Pro Arg Glu Leu Thr Thr Thr Cys Leu Asn Thr Thr			
245	250	255	260
aca gca tct gtc ctc cag ttt tcc att ggg tca gga tca tgt cga ttt	1110		
Thr Ala Ser Val Leu Gln Phe Ser Ile Gly Ser Gly Ser Cys Arg Phe			
265	270	275	
agt tac tct gac ccc agc atc act gtg tca tac gcc aag aac aat acc	1158		
Ser Tyr Ser Asp Pro Ser Ile Thr Val Ser Tyr Ala Lys Asn Asn Thr			
280	285	290	
gct gat tgg att cag ctg gag aaa att aga gcc cct tcc aat gtg agc	1206		
Ala Asp Trp Ile Gln Leu Glu Lys Ile Arg Ala Pro Ser Asn Val Ser			
295	300	305	
aca gtc atc cac atc ctg tac ctc ccc gag gaa gcc aaa ggg gag agc	1254		
Thr Val Ile His Ile Leu Tyr Leu Pro Glu Glu Ala Lys Gly Glu Ser			
310	315	320	
gtg cag ttc cag tgg aaa cag gac agc ctg cga gtg ggt gag gtg tat	1302		
Val Gln Phe Gln Trp Lys Gln Asp Ser Leu Arg Val Gly Glu Val Tyr			
325	330	335	340
gag gcc tgc tgg gcc ctg gat aac atc ctg gtc atc aat tca gcc cac	1350		
Glu Ala Cys Trp Ala Leu Asp Asn Ile Leu Val Ile Asn Ser Ala His			
345	350	355	
aga gaa gtc gtt ctg gag gac aac ctc gac ccg gtc gac acg ggc aac	1398		

Arg Glu Val Val Leu Glu Asp Asn Leu Asp Pro Val Asp Thr Gly Asn	
360	365 370
tgg ctc ttc ttc cct gga gca acg gtc aag cat agc tgt cag tca gat	1446
Trp Leu Phe Phe Pro Gly Ala Thr Val Lys His Ser Cys Gln Ser Asp	
375	380 385
ggg aac tcc att tat ttc cat gga aat gaa ggc agc gag ttc aat ttt	1494
Gly Asn Ser Ile Tyr Phe His Gly Asn Glu Gly Ser Glu Phe Asn Phe	
390	395 400
gcc acc acc cgg gat gta gat ctt tct aca gag gat att caa gag cag	1542
Ala Thr Thr Arg Asp Val Asp Leu Ser Thr Glu Asp Ile Gln Glu Gln	
405	410 415 420
tgg tca gaa gaa ttt gag agc cag ccc aca gga tgg gat atc ttg gga	1590
Trp Ser Glu Glu Phe Glu Ser Gln Pro Thr Gly Trp Asp Ile Leu Gly	
425	430 435
gca gta gtt ggt gca gac tgt gga acc gta gaa tca gga cta tca ctg	1638
Ala Val Val Gly Ala Asp Cys Gly Thr Val Glu Ser Gly Leu Ser Leu	
440	445 450
gtg ttc ctc aaa gat gga gag agg aag ctt tgc acc ccc tac atg gat	1686
Val Phe Leu Lys Asp Gly Glu Arg Lys Leu Cys Thr Pro Tyr Met Asp	
455	460 465
aca act ggt tat ggc aac ctg agg ttc tac ttc gtt atg gga gga atc	1734
Thr Thr Gly Tyr Gly Asn Leu Arg Phe Tyr Phe Val Met Gly Gly Ile	
470	475 480
tgt gac cct gga gtc tct cat gaa aac gat atc atc tta tat gca aag	1782
Cys Asp Pro Gly Val Ser His Glu Asn Asp Ile Ile Leu Tyr Ala Lys	
485	490 495 500
att gaa gga aga aaa gaa cac att gca ctg gac act ctt acc tat tct	1830
Ile Glu Gly Arg Lys Glu His Ile Ala Leu Asp Thr Leu Thr Tyr Ser	
505	510 515

tcc tat aag gtt ccg tct ttg gtt tct gtg gtc atc aac cct gaa ctt	1878
Ser Tyr Lys Val Pro Ser Leu Val Ser Val Val Ile Asn Pro Glu Leu	
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cag aca cct gcc acc aaa ttt tgt ctc agg caa aag agc cac caa ggg	1926
Gln Thr Pro Ala Thr Lys Phe Cys Leu Arg Gln Lys Ser His Gln Gly	
535 540 545	
tat aat cgg aat gtc tgg gct gtg gac ttc ttc cat gtg ctg ccc gtt	1974
Tyr Asn Arg Asn Val Trp Ala Val Asp Phe Phe His Val Leu Pro Val	
550 555 560	
ctc cct tca aca atg tct cac atg atc cag ttt tct att aat ttg gga	2022
Leu Pro Ser Thr Met Ser His Met Ile Gln Phe Ser Ile Asn Leu Gly	
565 570 575 580	
tgc ggc aca cac cag cct ggg aac agc gtc agc ttg gag ttt tct act	2070
Cys Gly Thr His Gln Pro Gly Asn Ser Val Ser Leu Glu Phe Ser Thr	
585 590 595	
aac cat gga cgg tcc tgg tcc cta ctc cac act gag tgc ttg ccg gag	2118
Asn His Gly Arg Ser Trp Ser Leu Leu His Thr Glu Cys Leu Pro Glu	
600 605 610	
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Ile Cys Ala Gly Pro His Leu Pro His Ser Thr Val Tyr Ser Ser Glu	
615 620 625	
aac tac agc ggg tgg aac cga atc acg att cct ctc cct aat gca gca	2214
Asn Tyr Ser Gly Trp Asn Arg Ile Thr Ile Pro Leu Pro Asn Ala Ala	
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ctc acc cga gac acc agg att cgc tgg aga caa aca ggc cca atc ctg	2262
Leu Thr Arg Asp Thr Arg Ile Arg Trp Arg Gln Thr Gly Pro Ile Leu	
645 650 655 660	
gga aat atg tgg gca att gat aat gtt tat ata ggt cct tcg tgt ctc	2310
Gly Asn Met Trp Ala Ile Asp Asn Val Tyr Ile Gly Pro Ser Cys Leu	

665	670	675	
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Lys Phe Cys Ser Gly Arg Gly Gln Cys Thr Arg His Gly Cys Lys Cys			
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Asp Pro Gly Phe Ser Gly Pro Ala Cys Glu Met Ala Ser Gln Thr Phe			
695	700	705	
cca atg ttt att tcg gaa agc ttt ggc agt gcc aga ctt tcc tct tac	2454		
Pro Met Phe Ile Ser Glu Ser Phe Gly Ser Ala Arg Leu Ser Ser Tyr			
710	715	720	
cat aac ttt tac tct atc cgt ggt gct gaa gtc agc ttt ggt tgt ggt	2502		
His Asn Phe Tyr Ser Ile Arg Gly Ala Glu Val Ser Phe Gly Cys Gly			
725	730	735	740
gtc tta gcc agt ggt aag gct ctg gtt ttc aac aaa gat ggg agg cgg	2550		
Val Leu Ala Ser Gly Lys Ala Leu Val Phe Asn Lys Asp Gly Arg Arg			
745	750	755	
cag cta atc acg tcc ttt ctg gac agc tcg cag tcc agg ttt ctt cag	2598		
Gln Leu Ile Thr Ser Phe Leu Asp Ser Ser Gln Ser Arg Phe Leu Gln			
760	765	770	
ttt aca ctg agg ctg ggg agc aag tct gtg ctg agc acg tgc aga gcc	2646		
Phe Thr Leu Arg Leu Gly Ser Lys Ser Val Leu Ser Thr Cys Arg Ala			
775	780	785	
cct gac cag ccg ggg gag gga gtc ctg ctg cac tat tca tat gac aac	2694		
Pro Asp Gln Pro Gly Glu Gly Val Leu Leu His Tyr Ser Tyr Asp Asn			
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Gly Ile Thr Trp Lys Leu Leu Glu His Tyr Ser Tyr Val Asn Tyr His			
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gag ccc aga ata atc tct gta gag cta ccg gat gat gca aga cag ttt	2790		

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 Asp Val Trp Ala Ile Asp Glu Ile Val Met Thr Ser Val Leu Phe Asn
 855 860 865
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 Gly Phe Tyr Leu Gly Asn Val Gln Pro Tyr Cys Gly His Asp Trp Thr
 885 890 895 900
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 905 910 915
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 Glu Thr Gln Ser Met Gln Ile Gly Ala Ser Tyr Met Ile Gln Phe Ser
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 Leu Val Met Gly Cys Gly Gln Lys Tyr Thr Pro His Met Asp Asn Gln
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 Val Lys Leu Glu Tyr Ser Ala Asn His Gly Leu Thr Trp His Leu Val
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 Gln Glu Glu Cys Leu Pro Ser Met Pro Ser Cys Gln Glu Phe Thr Ser
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 Ala Ser Ile Tyr His Ala Ser Glu Phe Thr Gln Trp Arg Arg Val Thr
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 1000 1005 1010
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 Ser Gln Ser Tyr Tyr Thr Ala Gln Asp Glu Trp Ala Leu Asp Asn Ile
 1015 1020 1025
 tac att ggg cag cag tgc ccc aac atg tgc agt ggg cat ggc tca tgt 3414
 Tyr Ile Gly Gln Gln Cys Pro Asn Met Cys Ser Gly His Gly Ser Cys
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 Asp His Gly Val Cys Arg Cys Asp Gln Gly Tyr Gln Gly Thr Glu Cys
 1045 1050 1055 1060
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 His Pro Glu Ala Ala Leu Pro Ser Thr Ile Met Ser Asp Phe Glu Asn
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 1080 1085 1090
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 Val Lys Pro Glu Gln Gly Cys Gly Val Val Ser Ser Gly Ser Ser Leu
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 Tyr Phe Ser Lys Ala Gly Lys Arg Gln Leu Val Ser Trp Asp Leu Asp
 1110 1115 1120
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 Thr Ser Trp Val Asp Phe Val Gln Phe Tyr Ile Gln Ile Gly Gly Glu

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Ser Ala Ala Cys Asn Lys Pro Asp Ser Arg Glu Glu Gly Ile Leu Leu				
	1145	1150	1155	
cag tat agc aac aac ggg ggc atc cag tgg cac ctg ctg gca gag atg				3798
Gln Tyr Ser Asn Asn Gly Gly Ile Gln Trp His Leu Leu Ala Glu Met				
	1160	1165	1170	
tac ttc tca gac ttc agc aaa ccc aga ttt gtc tac ctg gag ctc cca				3846
Tyr Phe Ser Asp Phe Ser Lys Pro Arg Phe Val Tyr Leu Glu Leu Pro				
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gct gct ggg aag acc cct tgt acc agg ttc cgc tgg tgg aag cct gtg				3894
Ala Ala Gly Lys Thr Pro Cys Thr Arg Phe Arg Trp Trp Lys Pro Val				
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Phe Ser Gly Glu Asp Tyr Asp Gln Trp Ala Val Asp Asp Ile Ile Ile				
1205	1210	1215	1220	
ctg tca gag aag cag aag cag gtt atc cca gtt gtc aac cca act ttg				3990
Leu Ser Glu Lys Gln Lys Gln Val Ile Pro Val Val Asn Pro Thr Leu				
	1225	1230	1235	
ccc cag aac ttc tat gag aag cca gct ttc gat tac cct atg aac caa				4038
Pro Gln Asn Phe Tyr Glu Lys Pro Ala Phe Asp Tyr Pro Met Asn Gln				
	1240	1245	1250	
atg agt gtg tgg cta atg ttg gcc aat gaa ggc atg gct aaa aac gac				4086
Met Ser Val Trp Leu Met Leu Ala Asn Glu Gly Met Ala Lys Asn Asp				
	1255	1260	1265	
agc ttc tgt gcg acc acg ccg tca gcc atg gtg ttt gga aag tca gat				4134
Ser Phe Cys Ala Thr Thr Pro Ser Ala Met Val Phe Gly Lys Ser Asp				
	1270	1275	1280	
gga gac cgg ttt gca gla act cga gat ctg acc ctg aaa cct gga tat				4182

Gly Asp Arg Phe Ala Val Thr Arg Asp Leu Thr Leu Lys Pro Gly Tyr	
1285 1290 1295 1300	
gtg ctg cag ttc aag cta aac ata ggc tgc acc agc cag ttc agc agc	4230
Val Leu Gln Phe Lys Leu Asn Ile Gly Cys Thr Ser Gln Phe Ser Ser	
1305 1310 1315	
act gcc ccg gtt ctc ctg cag tat tca cat gat gcc ggc atg tcg tgg	4278
Thr Ala Pro Val Leu Leu Gln Tyr Ser His Asp Ala Gly Met Ser Trp	
1320 1325 1330	
ttt ctg ttg aag gaa gga tgc ttc cca gcg tca gca gcc aaa gga tgt	4326
Phe Leu Leu Lys Glu Gly Cys Phe Pro Ala Ser Ala Ala Lys Gly Cys	
1335 1340 1345	
gaa ggg aac tcc agg gaa ttg agt gag cct act gtc tat tat act ggg	4374
Glu Gly Asn Ser Arg Glu Leu Ser Glu Pro Thr Val Tyr Tyr Thr Gly	
1350 1355 1360	
gac ttc gaa gaa tgg act aga atc acc att gcc att cca agg tcc ctt	4422
Asp Phe Glu Glu Trp Thr Arg Ile Thr Ile Ala Ile Pro Arg Ser Leu	
1365 1370 1375 1380	
gca tcc agc aag acc aga ttc cga tgg atc caa gag agc agc tct cag	4470
Ala Ser Ser Lys Thr Arg Phe Arg Trp Ile Gln Glu Ser Ser Ser Gln	
1385 1390 1395	
aag aat gtg ccc ccg ttt ggc tta gat ggg gtg tac ata tct gag cct	4518
Lys Asn Val Pro Pro Phe Gly Leu Asp Gly Val Tyr Ile Ser Glu Pro	
1400 1405 1410	
tgt ccc agt tac tgc agt ggc cat gga gac tgc atc tcg ggg gtg tgt	4566
Cys Pro Ser Tyr Cys Ser Gly His Gly Asp Cys Ile Ser Gly Val Cys	
1415 1420 1425	
ttt tgt gac ctg ggg tac aca gct gca caa gga acc tgt gtg tca aac	4614
Phe Cys Asp Leu Gly Tyr Thr Ala Ala Gln Gly Thr Cys Val Ser Asn	
1430 1435 1440	

acc cct aac cac agt gag atg ttc gac agg ttt gag ggg aag cta agc 4662
 Thr Pro Asn His Ser Glu Met Phe Asp Arg Phe Glu Gly Lys Leu Ser
 1445 1450 1455 1460
 cca ctg tgg tac aaa atc acc ggg ggt cag gtt ggc acg ggc tgt ggc 4710
 Pro Leu Trp Tyr Lys Ile Thr Gly Gly Gln Val Gly Thr Gly Cys Gly
 1465 1470 1475
 acc ctc aat gac ggc agg tcc ctc tac ttt aat ggc ctt ggg aaa agg 4758
 Thr Leu Asn Asp Gly Arg Ser Leu Tyr Phe Asn Gly Leu Gly Lys Arg
 1480 1485 1490
 gaa gcc agg aca gtc cca ctg gac acc agg aat atc agt ctt gtt cag 4806
 Glu Ala Arg Thr Val Pro Leu Asp Thr Arg Asn Ile Ser Leu Val Gln
 1495 1500 1505
 ttt tat ata caa att gga agt aaa aca tca ggg att acg tac atc acc 4854
 Phe Tyr Ile Gln Ile Gly Ser Lys Thr Ser Gly Ile Thr Tyr Ile Thr
 1510 1515 1520
 cca cgg gct aga tat gag ggg ctt gtt gtt cag tat tcc aat gat aat 4902
 Pro Arg Ala Arg Tyr Glu Gly Leu Val Val Gln Tyr Ser Asn Asp Asn
 1525 1530 1535 1540
 ggg ata ctt tgg cat ttg ctg aga gag ttg gat ttc atg tca ttc ctg 4950
 Gly Ile Leu Trp His Leu Leu Arg Glu Leu Asp Phe Met Ser Phe Leu
 1545 1550 1555
 gag cca cag atc att tcc att gac ctg ccc cgg gaa gca aag aca cct 4998
 Glu Pro Gln Ile Ile Ser Ile Asp Leu Pro Arg Glu Ala Lys Thr Pro
 1560 1565 1570
 gcc aca gct ttc cgg tgg tgg cag ccg cag cat ggg aag cat tcg gcc 5046
 Ala Thr Ala Phe Arg Trp Trp Gln Pro Gln His Gly Lys His Ser Ala
 1575 1580 1585
 cag tgg gct ttg ggt gat gtc ctt ata gga gtg aat gac agc tct caa 5094
 Gln Trp Ala Leu Gly Asp Val Leu Ile Gly Val Asn Asp Ser Ser Gln

1590	1595	1600	
act gga ttt caa gat aaa ttg gat ggc tcc ata gac ttg caa gcc aac			5142
Thr Gly Phe Gln Asp Lys Leu Asp Gly Ser Ile Asp Leu Gln Ala Asn			
1605	1610	1615	1620
tgg tat cga atc cag gga ggc caa gtt gat atc gac tgc ctc tct atg			5190
Trp Tyr Arg Ile Gln Gly Gly Gln Val Asp Ile Asp Cys Leu Ser Met			
1625	1630	1635	
gac act gcc ctt ata ttc act gaa aac ata gga aac cct cgc tat gct			5238
Asp Thr Ala Leu Ile Phe Thr Glu Asn Ile Gly Asn Pro Arg Tyr Ala			
1640	1645	1650	
gag acc tgg gac ttc cat gtg tca gag tca agc ttc tta cag tgg gaa			5286
Glu Thr Trp Asp Phe His Val Ser Glu Ser Ser Phe Leu Gln Trp Glu			
1655	1660	1665	
atg aac atg ggc tgc agc aag cct ttc agt ggt gcc cac ggc ata cag			5334
Met Asn Met Gly Cys Ser Lys Pro Phe Ser Gly Ala His Gly Ile Gln			
1670	1675	1680	
ctc cag tac tct ctg aac aac ggc aag gac tgg cag ctt gtc acc gaa			5382
Leu Gln Tyr Ser Leu Asn Asn Gly Lys Asp Trp Gln Leu Val Thr Glu			
1685	1690	1695	1700
gag tgt gtc cct cca acc att ggg tgc gtg cac tac aca gag agt tca			5430
Glu Cys Val Pro Pro Thr Ile Gly Cys Val His Tyr Thr Glu Ser Ser			
1705	1710	1715	
act tac aca tca gaa aga ttc cag aac tgg agg cgg gtc acg gtc tac			5478
Thr Tyr Thr Ser Glu Arg Phe Gln Asn Trp Arg Arg Val Thr Val Tyr			
1720	1725	1730	
ctg cca ctc gcc acc aat tct ccc agg act cgg ttc aga tgg att cag			5526
Leu Pro Leu Ala Thr Asn Ser Pro Arg Thr Arg Phe Arg Trp Ile Gln			
1735	1740	1745	
acc aac tat act gtt gga gca gat tcc tgg gct att gat aat gtc atc			5574

Thr Asn Tyr Thr Val Gly Ala Asp Ser Trp Ala Ile Asp Asn Val Ile
 1750 1755 1760
 ctg gcc tcg ggc tgt cct tgg atg tgc tca gga cga ggg atc tgt gat 5622
 Leu Ala Ser Gly Cys Pro Trp Met Cys Ser Gly Arg Gly Ile Cys Asp
 1765 1770 1775 1780
 tcg ggg cgc tgt gtg tgt gac cgg ggc ttc ggt gga ccc ttc tgt gtt 5670
 Ser Gly Arg Cys Val Cys Asp Arg Gly Phe Gly Gly Pro Phe Cys Val
 1785 1790 1795
 cct gtt gtt cct ctt ccc tcc att cta aaa gat gat ttc aat ggg aac 5718
 Pro Val Val Pro Leu Pro Ser Ile Leu Lys Asp Asp Phe Asn Gly Asn
 1800 1805 1810
 tta cat cct gac ctt tgg cct gaa gtg tac ggg gca gag agg ggc aat 5766
 Leu His Pro Asp Leu Trp Pro Glu Val Tyr Gly Ala Glu Arg Gly Asn
 1815 1820 1825
 ctg aat ggc gaa acc atc aaa tcc gga aca tgt ctg atc ttt aaa ggg 5814
 Leu Asn Gly Glu Thr Ile Lys Ser Gly Thr Cys Leu Ile Phe Lys Gly
 1830 1835 1840
 gag gga cta aga atg ctt att tcc aga gat cta gat tgt acc aat act 5862
 Glu Gly Leu Arg Met Leu Ile Ser Arg Asp Leu Asp Cys Thr Asn Thr
 1845 1850 1855 1860
 atg tat gtc cag ttc tct ctc cga ttt ata gcg aaa ggt acc cca gag 5910
 Met Tyr Val Gln Phe Ser Leu Arg Phe Ile Ala Lys Gly Thr Pro Glu
 1865 1870 1875
 agg tct cac tcc atc ctt cta cag ttc tct gtc agt gga gga gtc acc 5958
 Arg Ser His Ser Ile Leu Leu Gln Phe Ser Val Ser Gly Gly Val Thr
 1880 1885 1890
 tgg cac ctg atg gat gaa ttc tac ttc cct caa acg acc agc ata ctt 6006
 Trp His Leu Met Asp Glu Phe Tyr Phe Pro Gln Thr Thr Ser Ile Leu
 1895 1900 1905

ttc atc aat gtt ccc tta cca tac ggt gcc caa acc aac gct aca aga	6054
Phe Ile Asn Val Pro Leu Pro Tyr Gly Ala Gln Thr Asn Ala Thr Arg	
1910	1915
1920	
ttc aga ctc tgg caa ccg tac aat aat ggt aag aaa gaa gaa atc tgg	6102
Phe Arg Leu Trp Gln Pro Tyr Asn Asn Gly Lys Lys Glu Glu Ile Trp	
1925	1930
1935	1940
atc att gat gac ttt att att gat gga aac aat ttg aac aac ccc gtg	6150
Ile Ile Asp Asp Phe Ile Ile Asp Gly Asn Asn Leu Asn Asn Pro Val	
1945	1950
1955	
ctg ctg ctg gac acg ttc gac ttt ggg ccc agg gaa gac aat tgg ttt	6198
Leu Leu Leu Asp Thr Phe Asp Phe Gly Pro Arg Glu Asp Asn Trp Phe	
1960	1965
1970	
ttc tat ccg ggt ggt aat atc gga ctt tac tgc ccg tat tct tca aag	6246
Phe Tyr Pro Gly Gly Asn Ile Gly Leu Tyr Cys Pro Tyr Ser Ser Lys	
1975	1980
1985	
gga gct cct gag gag gat tgc gcc atg gtg ttt gtt tca aac gaa gtt	6294
Gly Ala Pro Glu Glu Asp Ser Ala Met Val Phe Val Ser Asn Glu Val	
1990	1995
2000	
gga gaa cac tcc att acc aca cga gac cta agt gtg aac gag aac acc	6342
Gly Glu His Ser Ile Thr Thr Arg Asp Leu Ser Val Asn Glu Asn Thr	
2005	2010
2015	2020
atc att caa ttt gag atc aat gtt ggc tgc tcc act gat agt tct tct	6390
Ile Ile Gln Phe Glu Ile Asn Val Gly Cys Ser Thr Asp Ser Ser Ser	
2025	2030
2035	
gct gat ccg gtc aga ctg gaa ttc tca agg gac ttt gga gcc acc tgg	6438
Ala Asp Pro Val Arg Leu Glu Phe Ser Arg Asp Phe Gly Ala Thr Trp	
2040	2045
2050	
cac ctg ctg ctg cct ctc tgc tac cac agc agc agc ctc gtc agc tcc	6486
His Leu Leu Leu Pro Leu Cys Tyr His Ser Ser Ser Leu Val Ser Ser	

2055	2060	2065	
tta tgc tcc act gag cat cac ccg agc agc acc tac tac gcg ggg acc			6534
Leu Cys Ser Thr Glu His His Pro Ser Ser Thr Tyr Tyr Ala Gly Thr			
2070	2075	2080	
acc cag ggc tgg cgg cgg gag gtc gtg cac ttc gga aag ctg cac ctt			6582
Thr Gln Gly Trp Arg Arg Glu Val Val His Phe Gly Lys Leu His Leu			
2085	2090	2095	2100
tgt gga tct gtg cgt ttc cgt tgg tac cag gga ttt tat cct gct ggc			6630
Cys Gly Ser Val Arg Phe Arg Trp Tyr Gln Gly Phe Tyr Pro Ala Gly			
2105	2110	2115	
tct cag ccg gtc aca tgg gcc att gac aat gtc tac att ggt ccc cag			6678
Ser Gln Pro Val Thr Trp Ala Ile Asp Asn Val Tyr Ile Gly Pro Gln			
2120	2125	2130	
tgt gaa gag atg tgc tat ggg cac ggg agc tgc atc aat gga acc aag			6726
Cys Glu Glu Met Cys Tyr Gly His Gly Ser Cys Ile Asn Gly Thr Lys			
2135	2140	2145	
tgt ata tgt gac ccg ggc tac tct ggg cca acc tgt aaa ata agc acc			6774
Cys Ile Cys Asp Pro Gly Tyr Ser Gly Pro Thr Cys Lys Ile Ser Thr			
2150	2155	2160	
aaa aat cct gat ttt ctc aaa gac gac ttt gaa ggt caa ctg gaa tcc			6822
Lys Asn Pro Asp Phe Leu Lys Asp Asp Phe Glu Gly Gln Leu Glu Ser			
2165	2170	2175	2180
gat cga ttc tta ctg atg agc ggt ggg aag ccg tct cgt aag tgt ggc			6870
Asp Arg Phe Leu Leu Met Ser Gly Gly Lys Pro Ser Arg Lys Cys Gly			
2185	2190	2195	
atc ctt tcc agt ggg aac aac ctc ttc ttc aat gag gac ggc ttg cgc			6918
Ile Leu Ser Ser Gly Asn Asn Leu Phe Phe Asn Glu Asp Gly Leu Arg			
2200	2205	2210	
atg cta gta aca cgg gac ctg gat tta tca cat gca agg ttt gtg cag			6966

Met Leu Val Thr Arg Asp Leu Asp Leu Ser His Ala Arg Phe Val Gln
2215 2220 2225
ttc ttc atg aga ctg gga tgt ggt aaa ggt gtt cca gac ccc agg agc 7014
Phe Phe Met Arg Leu Gly Cys Gly Lys Gly Val Pro Asp Pro Arg Ser
2230 2235 2240
cag ccc gtg ctt ctg cag tac tcc ctc aat ggc ggc ctc tcc tgg agt 7062
Gln Pro Val Leu Leu Gln Tyr Ser Leu Asn Gly Gly Leu Ser Trp Ser
2245 2250 2255 2260
ctt ctt caa gag ttc ctc ttc agc aac tcc agc aat gtg ggc agg tac 7110
Leu Leu Gln Glu Phe Leu Phe Ser Asn Ser Ser Asn Val Gly Arg Tyr
2265 2270 2275
att gcc ctg gaa atg ccc ctg aaa gcc cgt tct ggt tcg aca cgc ctc 7158
Ile Ala Leu Glu Met Pro Leu Lys Ala Arg Ser Gly Ser Thr Arg Leu
2280 2285 2290
cgc tgg tgg cag cca tct gaa aat ggg cac ttc tat agc ccc tgg gtg 7206
Arg Trp Trp Gln Pro Ser Glu Asn Gly His Phe Tyr Ser Pro Trp Val
2295 2300 2305
atc gac cag att ctt att gga gga aat atc tct ggt aat aca gtc tta 7254
Ile Asp Gln Ile Leu Ile Gly Gly Asn Ile Ser Gly Asn Thr Val Leu
2310 2315 2320
gaa gat gat ttc tca act ctg gac agc aga aag tgg ctg ctt cac cca 7302
Glu Asp Asp Phe Ser Thr Leu Asp Ser Arg Lys Trp Leu Leu His Pro
2325 2330 2335 2340
gga ggc acc aag atg cct gtg tgt ggc tcc aca ggc gat gcc ctg gtc 7350
Gly Gly Thr Lys Met Pro Val Cys Gly Ser Thr Gly Asp Ala Leu Val
2345 2350 2355
ttt att gaa aag gcc agc acc cgt tac gtg gtc acg aca gac atc gct 7398
Phe Ile Glu Lys Ala Ser Thr Arg Tyr Val Val Thr Thr Asp Ile Ala
2360 2365 2370

gtg aat gag gac tca ttc cta cag ata gac ttt gct gcc tcc tgc tca	7446
Val Asn Glu Asp Ser Phe Leu Gln Ile Asp Phe Ala Ala Ser Cys Ser	
2375 2380 2385	
gtc aca gac tcc tgc tat gct att gaa ctg gag tac tcg gtg gat ctc	7494
Val Thr Asp Ser Cys Tyr Ala Ile Glu Leu Glu Tyr Ser Val Asp Leu	
2390 2395 2400	
ggg ctg tcg tgg cac ccg ctg gtg agg gac tgc ctg cct acc aat gtt	7542
Gly Leu Ser Trp His Pro Leu Val Arg Asp Cys Leu Pro Thr Asn Val	
2405 2410 2415 2420	
gag tgt agt cgt tac cac ctg cag cgg atc ctg gtg tca gat act ttc	7590
Glu Cys Ser Arg Tyr His Leu Gln Arg Ile Leu Val Ser Asp Thr Phe	
2425 2430 2435	
aac aag tgg acc aga atc act ctg ccc ctg cct tcc tac acc agg tct	7638
Asn Lys Trp Thr Arg Ile Thr Leu Pro Leu Pro Ser Tyr Thr Arg Ser	
2440 2445 2450	
caa gcc act cgt ttc cgc tgg cat cag cca gcg cct ttt gac aag cag	7686
Gln Ala Thr Arg Phe Arg Trp His Gln Pro Ala Pro Phe Asp Lys Gln	
2455 2460 2465	
cag acc tgg gca ata gat aat gtc tat att ggg gat ggt tgc cta gac	7734
Gln Thr Trp Ala Ile Asp Asn Val Tyr Ile Gly Asp Gly Cys Leu Asp	
2470 2475 2480	
atg tgc agt ggc cac ggg aga tgc gtc cag gga agc tgt gtc tgt gat	7782
Met Cys Ser Gly His Gly Arg Cys Val Gln Gly Ser Cys Val Cys Asp	
2485 2490 2495 2500	
gaa cag tgg gga ggc ctg tac tgt gat gag cct gag acc tcc ctt ccc	7830
Glu Gln Trp Gly Gly Leu Tyr Cys Asp Glu Pro Glu Thr Ser Leu Pro	
2505 2510 2515	
acc cag ctc aaa gac aac ttc aac cga gcc ccc tcc aac cag aac tgg	7878
Thr Gln Leu Lys Asp Asn Phe Asn Arg Ala Pro Ser Asn Gln Asn Trp	

2520	2525	2530	
ctg act gtg agc ggt ggg aag ctg agt aca gtg tgt ggg gct gtg gct			7926
Leu Thr Val Ser Gly Gly Lys Leu Ser Thr Val Cys Gly Ala Val Ala			
2535	2540	2545	
tcc ggc ctg gct ctc cat ttc agt ggg ggc tgc agc cga ttg tta gtc			7974
Ser Gly Leu Ala Leu His Phe Ser Gly Gly Cys Ser Arg Leu Leu Val			
2550	2555	2560	
act gtg gat ctg aac ctc acc aat gct gag ttt atc cag ttt tac ttt			8022
Thr Val Asp Leu Asn Leu Thr Asn Ala Glu Phe Ile Gln Phe Tyr Phe			
2565	2570	2575	2580
atg tat gga tgc ctc att acg ccg agc aac cgt aac cag gga gtc ctg			8070
Met Tyr Gly Cys Leu Ile Thr Pro Ser Asn Arg Asn Gln Gly Val Leu			
2585	2590	2595	
ctg gag tac tct gtc aat gga ggc atc acc tgg aac ttg ctg atg gag			8118
Leu Glu Tyr Ser Val Asn Gly Gly Ile Thr Trp Asn Leu Leu Met Glu			
2600	2605	2610	
att ttc tat gac cag tac agc aaa cct gga ttt gtg aat atc ctt ctc			8166
Ile Phe Tyr Asp Gln Tyr Ser Lys Pro Gly Phe Val Asn Ile Leu Leu			
2615	2620	2625	
cct cct gat gct aaa gag att gcc act cgc ttc cga tgg tgg cag cca			8214
Pro Pro Asp Ala Lys Glu Ile Ala Thr Arg Phe Arg Trp Trp Gln Pro			
2630	2635	2640	
cga cat gat ggc ctt gac cag aat gac tgg gcc att gac aat gtc ctc			8262
Arg His Asp Gly Leu Asp Gln Asn Asp Trp Ala Ile Asp Asn Val Leu			
2645	2650	2655	2660
atc tcg ggc tct gcg gac cag agg aca gtc atg ctg gac acc ttt agc			8310
Ile Ser Gly Ser Ala Asp Gln Arg Thr Val Met Leu Asp Thr Phe Ser			
2665	2670	2675	
agc gcc cca gta cca cag cat gag cgc tcc ccc gca gac gct ggc cct			8358

Ser Ala Pro Val Pro Gln His Glu Arg Ser Pro Ala Asp Ala Gly Pro
 2680 2685 2690
 gtt gga aga att gct ttt gaa atg ttc tta gaa gac aaa act tca gtg 8406
 Val Gly Arg Ile Ala Phe Glu Met Phe Leu Glu Asp Lys Thr Ser Val
 2695 2700 2705
 aat gag aat tgg ctc ttc cat gat gac tgt aca gtg gaa aga ttc tgt 8454
 Asn Glu Asn Trp Leu Phe His Asp Asp Cys Thr Val Glu Arg Phe Cys
 2710 2715 2720
 gac tcg cca gat ggt gtc atg ctc tgt ggc agc cat gat gga cga gag 8502
 Asp Ser Pro Asp Gly Val Met Leu Cys Gly Ser His Asp Gly Arg Glu
 2725 2730 2735 2740
 gtg tat gca gtg act cat gac ctg acg ccc act gag aac tgg atc atg 8550
 Val Tyr Ala Val Thr His Asp Leu Thr Pro Thr Glu Asn Trp Ile Met
 2745 2750 2755
 cag ttc aag atc tct gtt gga tgc aaa gtg cct gaa aaa att gcc cag 8598
 Gln Phe Lys Ile Ser Val Gly Cys Lys Val Pro Glu Lys Ile Ala Gln
 2760 2765 2770
 aat caa att cac gtg cag ttt tct act gac ttt ggc gtg agc tgg agt 8646
 Asn Gln Ile His Val Gln Phe Ser Thr Asp Phe Gly Val Ser Trp Ser
 2775 2780 2785
 tat tta gtc cct cag tgc tta ccc gcc gac cca aag tgt tct gga agc 8694
 Tyr Leu Val Pro Gln Cys Leu Pro Ala Asp Pro Lys Cys Ser Gly Ser
 2790 2795 2800
 gtt tct caa ccg tct gtg ttc ttc cca act gaa ggg tgg aaa agg atc 8742
 Val Ser Gln Pro Ser Val Phe Phe Pro Thr Glu Gly Trp Lys Arg Ile
 2805 2810 2815 2820
 acc tac ccg ctt cct gaa agc tta acg ggg aat cct gta aga ttt agg 8790
 Thr Tyr Pro Leu Pro Glu Ser Leu Thr Gly Asn Pro Val Arg Phe Arg
 2825 2830 2835

ttc tac caa aag tac tca gat gtg cag tgg gca att gac aat ttc tac 8838
 Phe Tyr Gln Lys Tyr Ser Asp Val Gln Trp Ala Ile Asp Asn Phe Tyr
 2840 2845 2850
 ctt ggc cct gga tgt ttg gac aac tgt gga ggc cac gga gac tgc cta 8886
 Leu Gly Pro Gly Cys Leu Asp Asn Cys Gly Gly His Gly Asp Cys Leu
 2855 2860 2865
 aag gaa cag tgt atc tgt gac cca ggc tac tca ggg cca aac tgc tac 8934
 Lys Glu Gln Cys Ile Cys Asp Pro Gly Tyr Ser Gly Pro Asn Cys Tyr
 2870 2875 2880
 tta act cac agc ctg aag act ttc ctg aag gag cgc ttt gac agt gag 8982
 Leu Thr His Ser Leu Lys Thr Phe Leu Lys Glu Arg Phe Asp Ser Glu
 2885 2890 2895 2900
 gag atc aag cct gac tta tgg atg tcc ttg gaa ggc gga agc act tgt 9030
 Glu Ile Lys Pro Asp Leu Trp Met Ser Leu Glu Gly Gly Ser Thr Cys
 2905 2910 2915
 aca gag tgc ggg gtc ctc gcc gag aac act gca ctc tat ttt ggg gga 9078
 Thr Glu Cys Gly Val Leu Ala Glu Asn Thr Ala Leu Tyr Phe Gly Gly
 2920 2925 2930
 tcc act gtg aga caa gct att act caa gac tta gat ctc aga ggt gca 9126
 Ser Thr Val Arg Gln Ala Ile Thr Gln Asp Leu Asp Leu Arg Gly Ala
 2935 2940 2945
 aaa ttc ctg cag tac tgg gga cgt atc ggc agt gag aac aac atg aca 9174
 Lys Phe Leu Gln Tyr Trp Gly Arg Ile Gly Ser Glu Asn Asn Met Thr
 2950 2955 2960
 tct tgc cat cgg cct gtc tgc cgg aag gaa ggc gtg ctg ctg gac ttc 9222
 Ser Cys His Arg Pro Val Cys Arg Lys Glu Gly Val Leu Leu Asp Phe
 2965 2970 2975 2980
 tct acg gat gga gga atc act tgg acc ttg ctt cac gag atg gat ttc 9270
 Ser Thr Asp Gly Gly Ile Thr Trp Thr Leu Leu His Glu Met Asp Phe

2985	2990	2995	
cag aaa tac att tct gtg agg cac gac tac atc ctc ctg cct gag ggg			9318
Gln Lys Tyr Ile Ser Val Arg His Asp Tyr Ile Leu Leu Pro Glu Gly			
3000	3005	3010	
gcc ctc acc aac aca act cga ctt cgc tgg tgg cag cct ttt gtc atc			9366
Ala Leu Thr Asn Thr Thr Arg Leu Arg Trp Trp Gln Pro Phe Val Ile			
3015	3020	3025	
agc aat ggg ctc gtg gtt tcc ggg gtg gag cgt gcg cag tgg gca ctg			9414
Ser Asn Gly Leu Val Val Ser Gly Val Glu Arg Ala Gln Trp Ala Leu			
3030	3035	3040	
gac aac att ctg att ggt gga gca gaa atc aat cca agc caa ctg gtg			9462
Asp Asn Ile Leu Ile Gly Gly Ala Glu Ile Asn Pro Ser Gln Leu Val			
3045	3050	3055	3060
gac act ttc gat gac gaa ggc tcc tcc cat gaa gaa aac tgg agt ttt			9510
Asp Thr Phe Asp Asp Glu Gly Ser Ser His Glu Glu Asn Trp Ser Phe			
3065	3070	3075	
tac cct aat gca gta agg aca gca gga ttc tgt ggc aac cca tcc ttc			9558
Tyr Pro Asn Ala Val Arg Thr Ala Gly Phe Cys Gly Asn Pro Ser Phe			
3080	3085	3090	
cac ctc tac tgg cca aat aaa aag aag gac aag acc cac aat gca ctc			9606
His Leu Tyr Trp Pro Asn Lys Lys Lys Asp Lys Thr His Asn Ala Leu			
3095	3100	3105	
tcc tcc cga gag ctc att ata cag cca gga tac atg atg caa ttt aaa			9654
Ser Ser Arg Glu Leu Ile Ile Gln Pro Gly Tyr Met Met Gln Phe Lys			
3110	3115	3120	
att gtg gtg ggt tgt gaa gcc act tca tgt ggt gac ctt cat tcc gtg			9702
Ile Val Val Gly Cys Glu Ala Thr Ser Cys Gly Asp Leu His Ser Val			
3125	3130	3135	3140
atg ctg gag tac acc aag gat gca agg tcc gat tcc tgg cag ctc gtg			9750

Met Leu Glu Tyr Thr Lys Asp Ala Arg Ser Asp Ser Trp Gln Leu Val
3145 3150 3155
cag acc cag tgc cta cct tcc tct tcc aat agc att ggc tgc tcc ccg 9798
Gln Thr Gln Cys Leu Pro Ser Ser Ser Asn Ser Ile Gly Cys Ser Pro
3160 3165 3170
ttc cag ttc cat gaa gcc acc att tat aat gct gtc aac agc tca agc 9846
Phe Gln Phe His Glu Ala Thr Ile Tyr Asn Ala Val Asn Ser Ser Ser
3175 3180 3185
tgg aag agg atc acc atc cag ctc cca gac cac gtc tgc tca agt gcc 9894
Trp Lys Arg Ile Thr Ile Gln Leu Pro Asp His Val Ser Ser Ser Ala
3190 3195 3200
aca cag ttc cgc tgg atc cag aag gga gaa gaa acc gag aag caa agc 9942
Thr Gln Phe Arg Trp Ile Gln Lys Gly Glu Glu Thr Glu Lys Gln Ser
3205 3210 3215 3220
tgg gcc atc gac cac gtg tac atc gga gag gct tgt ccc aag ctc tgc 9990
Trp Ala Ile Asp His Val Tyr Ile Gly Glu Ala Cys Pro Lys Leu Cys
3225 3230 3235
agc ggg cat ggc tac tgc acc aca ggg gcc gtc tgc atc tgc gat gaa 10038
Ser Gly His Gly Tyr Cys Thr Thr Gly Ala Val Cys Ile Cys Asp Glu
3240 3245 3250
agc ttc caa ggt gac gac tgc tct gtc ttc agt cac gag ctt cct agt 10086
Ser Phe Gln Gly Asp Asp Cys Ser Val Phe Ser His Glu Leu Pro Ser
3255 3260 3265
tac att aaa gat aat ttt gaa tca gca aga gtc act gaa gcc aac tgg 10134
Tyr Ile Lys Asp Asn Phe Glu Ser Ala Arg Val Thr Glu Ala Asn Trp
3270 3275 3280
gaa acc atc cag ggt gga gtg atc gga agt ggc tgt ggg cag ctg gcg 10182
Glu Thr Ile Gln Gly Gly Val Ile Gly Ser Gly Cys Gly Gln Leu Ala
3285 3290 3295 3300

ccc tat gcc cat gga gat tcg ctc tac ttt aat ggt tgt cag ata agg 10230
 Pro Tyr Ala His Gly Asp Ser Leu Tyr Phe Asn Gly Cys Gln Ile Arg
 3305 3310 3315
 caa gct gcc acc aag cca ctg gac ctc act cga gca agc aaa att atg 10278
 Gln Ala Ala Thr Lys Pro Leu Asp Leu Thr Arg Ala Ser Lys Ile Met
 3320 3325 3330
 ttt gtc ttg caa att ggg agc cca gcc cag aca gac agt tgc aac agc 10326
 Phe Val Leu Gln Ile Gly Ser Pro Ala Gln Thr Asp Ser Cys Asn Ser
 3335 3340 3345
 gac ctc agc ggc ccc cac acc gtg gac aaa gca gta ctg ctg cag tac 10374
 Asp Leu Ser Gly Pro His Thr Val Asp Lys Ala Val Leu Leu Gln Tyr
 3350 3355 3360
 agt gtc aac aat ggc atc acc tgg cac gtc atc gct cag cac cag ccg 10422
 Ser Val Asn Asn Gly Ile Thr Trp His Val Ile Ala Gln His Gln Pro
 3365 3370 3375 3380
 aag gac ttc aca caa gct cag cgg gtg tct tac aac gtc ccc ctg gaa 10470
 Lys Asp Phe Thr Gln Ala Gln Arg Val Ser Tyr Asn Val Pro Leu Glu
 3385 3390 3395
 gct cgg atg aaa gga gtt cta ctg cgc tgg tgg cag cca cgc cac aat 10518
 Ala Arg Met Lys Gly Val Leu Leu Arg Trp Trp Gln Pro Arg His Asn
 3400 3405 3410
 gga aca ggt cat gat caa tgg gct ttg gac cat gtg gag gtc gtc cta 10566
 Gly Thr Gly His Asp Gln Trp Ala Leu Asp His Val Glu Val Val Leu
 3415 3420 3425
 gta agc act cgc aaa caa aat tac atg atg aat ttt tca cgg caa cat 10614
 Val Ser Thr Arg Lys Gln Asn Tyr Met Met Asn Phe Ser Arg Gln His
 3430 3435 3440
 ggg ctc agg cac ttc tac aac aga aga cga agg tcg ctt agg cga tac 10662
 Gly Leu Arg His Phe Tyr Asn Arg Arg Arg Arg Ser Leu Arg Arg Tyr

3445 3450 3455 3460
 cca tga agaatccaag tttatttccc ttccagcgt acaatgtgtc ccttcttggt 10718
 Pro
 tttttgaaac acctctcact gcatctgata tcaggaaaca aagatgaagg acttggcgaa 10778
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 ctgtatctac ttgctgtgtt gcaatatctt gctgtctggac tttagacctac ttgtattatg 11198
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 ccctcactgt gtctcttctg tgggttggtt ccttgtgggt catagtcata cttctgatg 11558
 aggtggagcc aacaccagca aagtatgatg gccctgtagc ctctgactag tcctgaaaca 11618
 gaaggctgca ccttaggcig aacctatgcta aaagcccatg cttaaatataa aaatg 11673

<210> 129

<211> 3461

<212> PRT

<213> Mus musculus

<400> 129

Met Glu Arg Gly Cys Trp Ala Pro Arg Ala Leu Val Leu Ala Val Leu

1

5

10

15

Leu Leu Leu Ala Thr Leu Arg Ala Arg Ala Ala Thr Gly Tyr Tyr Pro

20	25	30
Arg Phe Ser Pro Phe Phe Phe Leu Cys Thr His His Gly Glu Leu Glu		
35	40	45
Gly Asp Gly Glu Gln Gly Glu Val Leu Ile Ser Leu His Ile Ala Gly		
50	55	60
Asn Pro Thr Tyr Tyr Val Pro Gly Gln Glu Tyr His Val Thr Ile Ser		
65	70	75
Thr Ser Thr Phe Phe Asp Gly Leu Leu Val Thr Gly Leu Tyr Thr Ser		
85	90	95
Thr Ser Ile Gln Ser Ser Gln Ser Ile Gly Gly Ser Ser Ala Phe Gly		
100	105	110
Phe Gly Ile Met Ser Asp His Gln Phe Gly Asn Gln Phe Met Cys Ser		
115	120	125
Val Val Ala Ser His Val Ser His Leu Pro Thr Thr Asn Leu Ser Phe		
130	135	140
Val Trp Ile Ala Pro Pro Ala Gly Thr Gly Cys Val Asn Phe Met Ala		
145	150	155
Thr Ala Thr His Arg Gly Gln Val Ile Phe Lys Asp Ala Leu Ala Gln		
165	170	175
Gln Leu Cys Glu Gln Gly Ala Pro Thr Glu Ala Thr Ala Tyr Ser His		
180	185	190
Leu Ala Glu Ile His Ser Asp Ser Val Ile Leu Arg Asp Asp Phe Asp		
195	200	205
Ser Tyr Gln Gln Leu Glu Leu Asn Pro Asn Ile Trp Val Glu Cys Ser		
210	215	220
Asn Cys Glu Met Gly Glu Gln Cys Gly Thr Ile Met His Gly Asn Ala		
225	230	235
Val Thr Phe Cys Glu Pro Tyr Gly Pro Arg Glu Leu Thr Thr Thr Cys		
245	250	255

Leu Asn Thr Thr Thr Ala Ser Val Leu Gln Phe Ser Ile Gly Ser Gly
 260 265 270
 Ser Cys Arg Phe Ser Tyr Ser Asp Pro Ser Ile Thr Val Ser Tyr Ala
 275 280 285
 Lys Asn Asn Thr Ala Asp Trp Ile Gln Leu Glu Lys Ile Arg Ala Pro
 290 295 300
 Ser Asn Val Ser Thr Val Ile His Ile Leu Tyr Leu Pro Glu Glu Ala
 305 310 315 320
 Lys Gly Glu Ser Val Gln Phe Gln Trp Lys Gln Asp Ser Leu Arg Val
 325 330 335
 Gly Glu Val Tyr Glu Ala Cys Trp Ala Leu Asp Asn Ile Leu Val Ile
 340 345 350
 Asn Ser Ala His Arg Glu Val Val Leu Glu Asp Asn Leu Asp Pro Val
 355 360 365
 Asp Thr Gly Asn Trp Leu Phe Phe Pro Gly Ala Thr Val Lys His Ser
 370 375 380
 Cys Gln Ser Asp Gly Asn Ser Ile Tyr Phe His Gly Asn Glu Gly Ser
 385 390 395 400
 Glu Phe Asn Phe Ala Thr Thr Arg Asp Val Asp Leu Ser Thr Glu Asp
 405 410 415
 Ile Gln Glu Gln Trp Ser Glu Glu Phe Glu Ser Gln Pro Thr Gly Trp
 420 425 430
 Asp Ile Leu Gly Ala Val Val Gly Ala Asp Cys Gly Thr Val Glu Ser
 435 440 445
 Gly Leu Ser Leu Val Phe Leu Lys Asp Gly Glu Arg Lys Leu Cys Thr
 450 455 460
 Pro Tyr Met Asp Thr Thr Gly Tyr Gly Asn Leu Arg Phe Tyr Phe Val
 465 470 475 480
 Met Gly Gly Ile Cys Asp Pro Gly Val Ser His Glu Asn Asp Ile Ile

485	490	495
Leu Tyr Ala Lys Ile Glu Gly Arg Lys Glu His Ile Ala Leu Asp Thr		
500	505	510
Leu Thr Tyr Ser Ser Tyr Lys Val Pro Ser Leu Val Ser Val Val Ile		
515	520	525
Asn Pro Glu Leu Gln Thr Pro Ala Thr Lys Phe Cys Leu Arg Gln Lys		
530	535	540
Ser His Gln Gly Tyr Asn Arg Asn Val Trp Ala Val Asp Phe Phe His		
545	550	555
Val Leu Pro Val Leu Pro Ser Thr Met Ser His Met Ile Gln Phe Ser		
565	570	575
Ile Asn Leu Gly Cys Gly Thr His Gln Pro Gly Asn Ser Val Ser Leu		
580	585	590
Glu Phe Ser Thr Asn His Gly Arg Ser Trp Ser Leu Leu His Thr Glu		
595	600	605
Cys Leu Pro Glu Ile Cys Ala Gly Pro His Leu Pro His Ser Thr Val		
610	615	620
Tyr Ser Ser Glu Asn Tyr Ser Gly Trp Asn Arg Ile Thr Ile Pro Leu		
625	630	635
Pro Asn Ala Ala Leu Thr Arg Asp Thr Arg Ile Arg Trp Arg Gln Thr		
645	650	655
Gly Pro Ile Leu Gly Asn Met Trp Ala Ile Asp Asn Val Tyr Ile Gly		
660	665	670
Pro Ser Cys Leu Lys Phe Cys Ser Gly Arg Gly Gln Cys Thr Arg His		
675	680	685
Gly Cys Lys Cys Asp Pro Gly Phe Ser Gly Pro Ala Cys Glu Met Ala		
690	695	700
Ser Gln Thr Phe Pro Met Phe Ile Ser Glu Ser Phe Gly Ser Ala Arg		
705	710	715
		720

Leu Ser Ser Tyr His Asn Phe Tyr Ser Ile Arg Gly Ala Glu Val Ser
 725 730 735
 Phe Gly Cys Gly Val Leu Ala Ser Gly Lys Ala Leu Val Phe Asn Lys
 740 745 750
 Asp Gly Arg Arg Gln Leu Ile Thr Ser Phe Leu Asp Ser Ser Gln Ser
 755 760 765
 Arg Phe Leu Gln Phe Thr Leu Arg Leu Gly Ser Lys Ser Val Leu Ser
 770 775 780
 Thr Cys Arg Ala Pro Asp Gln Pro Gly Glu Gly Val Leu Leu His Tyr
 785 790 795 800
 Ser Tyr Asp Asn Gly Ile Thr Trp Lys Leu Leu Glu His Tyr Ser Tyr
 805 810 815
 Val Asn Tyr His Glu Pro Arg Ile Ile Ser Val Glu Leu Pro Asp Asp
 820 825 830
 Ala Arg Gln Phe Gly Ile Gln Phe Arg Trp Trp Gln Pro Tyr His Ser
 835 840 845
 Ser Gln Gly Glu Asp Val Trp Ala Ile Asp Glu Ile Val Met Thr Ser
 850 855 860
 Val Leu Phe Asn Ser Ile Ser Leu Asp Phe Thr Asn Leu Val Glu Val
 865 870 875 880
 Thr Gln Ser Leu Gly Phe Tyr Leu Gly Asn Val Gln Pro Tyr Cys Gly
 885 890 895
 His Asp Trp Thr Leu Cys Phe Thr Gly Asp Ser Lys Leu Ala Ser Ser
 900 905 910
 Met Arg Tyr Val Glu Thr Gln Ser Met Gln Ile Gly Ala Ser Tyr Met
 915 920 925
 Ile Gln Phe Ser Leu Val Met Gly Cys Gly Gln Lys Tyr Thr Pro His
 930 935 940
 Met Asp Asn Gln Val Lys Leu Glu Tyr Ser Ala Asn His Gly Leu Thr

945	950	955	960
Trp His Leu Val Gln Glu Glu Cys Leu Pro Ser Met Pro Ser Cys Gln			
	965	970	975
Glu Phe Thr Ser Ala Ser Ile Tyr His Ala Ser Glu Phe Thr Gln Trp			
	980	985	990
Arg Arg Val Thr Val Val Leu Pro Gln Lys Thr Trp Ser Gly Ala Thr			
	995	1000	1005
Arg Phe Arg Trp Ser Gln Ser Tyr Tyr Thr Ala Gln Asp Glu Trp Ala			
	1010	1015	1020
Leu Asp Asn Ile Tyr Ile Gly Gln Gln Cys Pro Asn Met Cys Ser Gly			
	1025	1030	1035
His Gly Ser Cys Asp His Gly Val Cys Arg Cys Asp Gln Gly Tyr Gln			
	1045	1050	1055
Gly Thr Glu Cys His Pro Glu Ala Ala Leu Pro Ser Thr Ile Met Ser			
	1060	1065	1070
Asp Phe Glu Asn Pro Ser Ser Trp Glu Ser Asp Trp Gln Glu Val Ile			
	1075	1080	1085
Gly Gly Glu Val Val Lys Pro Glu Gln Gly Cys Gly Val Val Ser Ser			
	1090	1095	1100
Gly Ser Ser Leu Tyr Phe Ser Lys Ala Gly Lys Arg Gln Leu Val Ser			
	1105	1110	1115
Trp Asp Leu Asp Thr Ser Trp Val Asp Phe Val Gln Phe Tyr Ile Gln			
	1125	1130	1135
Ile Gly Gly Glu Ser Ala Ala Cys Asn Lys Pro Asp Ser Arg Glu Glu			
	1140	1145	1150
Gly Ile Leu Leu Gln Tyr Ser Asn Asn Gly Gly Ile Gln Trp His Leu			
	1155	1160	1165
Leu Ala Glu Met Tyr Phe Ser Asp Phe Ser Lys Pro Arg Phe Val Tyr			
	1170	1175	1180

Leu Glu Leu Pro Ala Ala Gly Lys Thr Pro Cys Thr Arg Phe Arg Trp
 185 1190 1195 1200
 Trp Lys Pro Val Phe Ser Gly Glu Asp Tyr Asp Gln Trp Ala Val Asp
 1205 1210 1215
 Asp Ile Ile Ile Leu Ser Glu Lys Gln Lys Gln Val Ile Pro Val Val
 1220 1225 1230
 Asn Pro Thr Leu Pro Gln Asn Phe Tyr Glu Lys Pro Ala Phe Asp Tyr
 1235 1240 1245
 Pro Met Asn Gln Met Ser Val Trp Leu Met Leu Ala Asn Glu Gly Met
 1250 1255 1260
 Ala Lys Asn Asp Ser Phe Cys Ala Thr Thr Pro Ser Ala Met Val Phe
 265 1270 1275 1280
 Gly Lys Ser Asp Gly Asp Arg Phe Ala Val Thr Arg Asp Leu Thr Leu
 1285 1290 1295
 Lys Pro Gly Tyr Val Leu Gln Phe Lys Leu Asn Ile Gly Cys Thr Ser
 1300 1305 1310
 Gln Phe Ser Ser Thr Ala Pro Val Leu Leu Gln Tyr Ser His Asp Ala
 1315 1320 1325
 Gly Met Ser Trp Phe Leu Leu Lys Glu Gly Cys Phe Pro Ala Ser Ala
 1330 1335 1340
 Ala Lys Gly Cys Glu Gly Asn Ser Arg Glu Leu Ser Glu Pro Thr Val
 345 1350 1355 1360
 Tyr Tyr Thr Gly Asp Phe Glu Glu Trp Thr Arg Ile Thr Ile Ala Ile
 1365 1370 1375
 Pro Arg Ser Leu Ala Ser Ser Lys Thr Arg Phe Arg Trp Ile Gln Glu
 1380 1385 1390
 Ser Ser Ser Gln Lys Asn Val Pro Pro Phe Gly Leu Asp Gly Val Tyr
 1395 1400 1405
 Ile Ser Glu Pro Cys Pro Ser Tyr Cys Ser Gly His Gly Asp Cys Ile

1410	1415	1420	
Ser Gly Val Cys Phe Cys Asp Leu Gly Tyr Thr Ala Ala Gln Gly Thr			
425	1430	1435	1440
Cys Val Ser Asn Thr Pro Asn His Ser Glu Met Phe Asp Arg Phe Glu			
1445	1450	1455	
Gly Lys Leu Ser Pro Leu Trp Tyr Lys Ile Thr Gly Gly Gln Val Gly			
1460	1465	1470	
Thr Gly Cys Gly Thr Leu Asn Asp Gly Arg Ser Leu Tyr Phe Asn Gly			
1475	1480	1485	
Leu Gly Lys Arg Glu Ala Arg Thr Val Pro Leu Asp Thr Arg Asn Ile			
1490	1495	1500	
Ser Leu Val Gln Phe Tyr Ile Gln Ile Gly Ser Lys Thr Ser Gly Ile			
505	1510	1515	1520
Thr Tyr Ile Thr Pro Arg Ala Arg Tyr Glu Gly Leu Val Val Gln Tyr			
1525	1530	1535	
Ser Asn Asp Asn Gly Ile Leu Trp His Leu Leu Arg Glu Leu Asp Phe			
1540	1545	1550	
Met Ser Phe Leu Glu Pro Gln Ile Ile Ser Ile Asp Leu Pro Arg Glu			
1555	1560	1565	
Ala Lys Thr Pro Ala Thr Ala Phe Arg Trp Trp Gln Pro Gln His Gly			
1570	1575	1580	
Lys His Ser Ala Gln Trp Ala Leu Gly Asp Val Leu Ile Gly Val Asn			
585	1590	1595	1600
Asp Ser Ser Gln Thr Gly Phe Gln Asp Lys Leu Asp Gly Ser Ile Asp			
1605	1610	1615	
Leu Gln Ala Asn Trp Tyr Arg Ile Gln Gly Gly Gln Val Asp Ile Asp			
1620	1625	1630	
Cys Leu Ser Met Asp Thr Ala Leu Ile Phe Thr Glu Asn Ile Gly Asn			
1635	1640	1645	

Pro Arg Tyr Ala Glu Thr Trp Asp Phe His Val Ser Glu Ser Ser Phe
 1650 1655 1660
 Leu Gln Trp Glu Met Asn Met Gly Cys Ser Lys Pro Phe Ser Gly Ala
 665 1670 1675 1680
 His Gly Ile Gln Leu Gln Tyr Ser Leu Asn Asn Gly Lys Asp Trp Gln
 1685 1690 1695
 Leu Val Thr Glu Glu Cys Val Pro Pro Thr Ile Gly Cys Val His Tyr
 1700 1705 1710
 Thr Glu Ser Ser Thr Tyr Thr Ser Glu Arg Phe Gln Asn Trp Arg Arg
 1715 1720 1725
 Val Thr Val Tyr Leu Pro Leu Ala Thr Asn Ser Pro Arg Thr Arg Phe
 1730 1735 1740
 Arg Trp Ile Gln Thr Asn Tyr Thr Val Gly Ala Asp Ser Trp Ala Ile
 745 1750 1755 1760
 Asp Asn Val Ile Leu Ala Ser Gly Cys Pro Trp Met Cys Ser Gly Arg
 1765 1770 1775
 Gly Ile Cys Asp Ser Gly Arg Cys Val Cys Asp Arg Gly Phe Gly Gly
 1780 1785 1790
 Pro Phe Cys Val Pro Val Val Pro Leu Pro Ser Ile Leu Lys Asp Asp
 1795 1800 1805
 Phe Asn Gly Asn Leu His Pro Asp Leu Trp Pro Glu Val Tyr Gly Ala
 1810 1815 1820
 Glu Arg Gly Asn Leu Asn Gly Glu Thr Ile Lys Ser Gly Thr Cys Leu
 825 1830 1835 1840
 Ile Phe Lys Gly Glu Gly Leu Arg Met Leu Ile Ser Arg Asp Leu Asp
 1845 1850 1855
 Cys Thr Asn Thr Met Tyr Val Gln Phe Ser Leu Arg Phe Ile Ala Lys
 1860 1865 1870
 Gly Thr Pro Glu Arg Ser His Ser Ile Leu Leu Gln Phe Ser Val Ser

1875	1880	1885	
Gly Gly Val Thr Trp His Leu Met Asp Glu Phe Tyr Phe Pro Gln Thr			
1890	1895	1900	
Thr Ser Ile Leu Phe Ile Asn Val Pro Leu Pro Tyr Gly Ala Gln Thr			
905	1910	1915	1920
Asn Ala Thr Arg Phe Arg Leu Trp Gln Pro Tyr Asn Asn Gly Lys Lys			
1925	1930	1935	
Glu Glu Ile Trp Ile Ile Asp Asp Phe Ile Ile Asp Gly Asn Asn Leu			
1940	1945	1950	
Asn Asn Pro Val Leu Leu Leu Asp Thr Phe Asp Phe Gly Pro Arg Glu			
1955	1960	1965	
Asp Asn Trp Phe Phe Tyr Pro Gly Gly Asn Ile Gly Leu Tyr Cys Pro			
1970	1975	1980	
Tyr Ser Ser Lys Gly Ala Pro Glu Glu Asp Ser Ala Met Val Phe Val			
985	1990	1995	2000
Ser Asn Glu Val Gly Glu His Ser Ile Thr Thr Arg Asp Leu Ser Val			
2005	2010	2015	
Asn Glu Asn Thr Ile Ile Gln Phe Glu Ile Asn Val Gly Cys Ser Thr			
2020	2025	2030	
Asp Ser Ser Ser Ala Asp Pro Val Arg Leu Glu Phe Ser Arg Asp Phe			
2035	2040	2045	
Gly Ala Thr Trp His Leu Leu Leu Pro Leu Cys Tyr His Ser Ser Ser			
2050	2055	2060	
Leu Val Ser Ser Leu Cys Ser Thr Glu His His Pro Ser Ser Thr Tyr			
065	2070	2075	2080
Tyr Ala Gly Thr Thr Gln Gly Trp Arg Arg Glu Val Val His Phe Gly			
2085	2090	2095	
Lys Leu His Leu Cys Gly Ser Val Arg Phe Arg Trp Tyr Gln Gly Phe			
2100	2105	2110	

Tyr Pro Ala Gly Ser Gln Pro Val Thr Trp Ala Ile Asp Asn Val Tyr
 2115 2120 2125
 Ile Gly Pro Gln Cys Glu Glu Met Cys Tyr Gly His Gly Ser Cys Ile
 2130 2135 2140
 Asn Gly Thr Lys Cys Ile Cys Asp Pro Gly Tyr Ser Gly Pro Thr Cys
 145 2150 2155 2160
 Lys Ile Ser Thr Lys Asn Pro Asp Phe Leu Lys Asp Asp Phe Glu Gly
 2165 2170 2175
 Gln Leu Glu Ser Asp Arg Phe Leu Leu Met Ser Gly Gly Lys Pro Ser
 2180 2185 2190
 Arg Lys Cys Gly Ile Leu Ser Ser Gly Asn Asn Leu Phe Phe Asn Glu
 2195 2200 2205
 Asp Gly Leu Arg Met Leu Val Thr Arg Asp Leu Asp Leu Ser His Ala
 2210 2215 2220
 Arg Phe Val Gln Phe Phe Met Arg Leu Gly Cys Gly Lys Gly Val Pro
 225 2230 2235 2240
 Asp Pro Arg Ser Gln Pro Val Leu Leu Gln Tyr Ser Leu Asn Gly Gly
 2245 2250 2255
 Leu Ser Trp Ser Leu Leu Gln Glu Phe Leu Phe Ser Asn Ser Ser Asn
 2260 2265 2270
 Val Gly Arg Tyr Ile Ala Leu Glu Met Pro Leu Lys Ala Arg Ser Gly
 2275 2280 2285
 Ser Thr Arg Leu Arg Trp Trp Gln Pro Ser Glu Asn Gly His Phe Tyr
 2290 2295 2300
 Ser Pro Trp Val Ile Asp Gln Ile Leu Ile Gly Gly Asn Ile Ser Gly
 305 2310 2315 2320
 Asn Thr Val Leu Glu Asp Asp Phe Ser Thr Leu Asp Ser Arg Lys Trp
 2325 2330 2335
 Leu Leu His Pro Gly Gly Thr Lys Met Pro Val Cys Gly Ser Thr Gly

2340	2345	2350	
Asp Ala Leu Val Phe Ile Glu Lys Ala Ser Thr Arg Tyr Val Val Thr			
2355	2360	2365	
Thr Asp Ile Ala Val Asn Glu Asp Ser Phe Leu Gln Ile Asp Phe Ala			
2370	2375	2380	
Ala Ser Cys Ser Val Thr Asp Ser Cys Tyr Ala Ile Glu Leu Glu Tyr			
385	2390	2395	2400
Ser Val Asp Leu Gly Leu Ser Trp His Pro Leu Val Arg Asp Cys Leu			
2405	2410	2415	
Pro Thr Asn Val Glu Cys Ser Arg Tyr His Leu Gln Arg Ile Leu Val			
2420	2425	2430	
Ser Asp Thr Phe Asn Lys Trp Thr Arg Ile Thr Leu Pro Leu Pro Ser			
2435	2440	2445	
Tyr Thr Arg Ser Gln Ala Thr Arg Phe Arg Trp His Gln Pro Ala Pro			
2450	2455	2460	
Phe Asp Lys Gln Gln Thr Trp Ala Ile Asp Asn Val Tyr Ile Gly Asp			
465	2470	2475	2480
Gly Cys Leu Asp Met Cys Ser Gly His Gly Arg Cys Val Gln Gly Ser			
2485	2490	2495	
Cys Val Cys Asp Glu Gln Trp Gly Gly Leu Tyr Cys Asp Glu Pro Glu			
2500	2505	2510	
Thr Ser Leu Pro Thr Gln Leu Lys Asp Asn Phe Asn Arg Ala Pro Ser			
2515	2520	2525	
Asn Gln Asn Trp Leu Thr Val Ser Gly Gly Lys Leu Ser Thr Val Cys			
2530	2535	2540	
Gly Ala Val Ala Ser Gly Leu Ala Leu His Phe Ser Gly Gly Cys Ser			
545	2550	2555	2560
Arg Leu Leu Val Thr Val Asp Leu Asn Leu Thr Asn Ala Glu Phe Ile			
2565	2570	2575	

Gln Phe Tyr Phe Met Tyr Gly Cys Leu Ile Thr Pro Ser Asn Arg Asn
 2580 2585 2590
 Gln Gly Val Leu Leu Glu Tyr Ser Val Asn Gly Gly Ile Thr Trp Asn
 2595 2600 2605
 Leu Leu Met Glu Ile Phe Tyr Asp Gln Tyr Ser Lys Pro Gly Phe Val
 2610 2615 2620
 Asn Ile Leu Leu Pro Pro Asp Ala Lys Glu Ile Ala Thr Arg Phe Arg
 625 2630 2635 2640
 Trp Trp Gln Pro Arg His Asp Gly Leu Asp Gln Asn Asp Trp Ala Ile
 2645 2650 2655
 Asp Asn Val Leu Ile Ser Gly Ser Ala Asp Gln Arg Thr Val Met Leu
 2660 2665 2670
 Asp Thr Phe Ser Ser Ala Pro Val Pro Gln His Glu Arg Ser Pro Ala
 2675 2680 2685
 Asp Ala Gly Pro Val Gly Arg Ile Ala Phe Glu Met Phe Leu Glu Asp
 2690 2695 2700
 Lys Thr Ser Val Asn Glu Asn Trp Leu Phe His Asp Asp Cys Thr Val
 705 2710 2715 2720
 Glu Arg Phe Cys Asp Ser Pro Asp Gly Val Met Leu Cys Gly Ser His
 2725 2730 2735
 Asp Gly Arg Glu Val Tyr Ala Val Thr His Asp Leu Thr Pro Thr Glu
 2740 2745 2750
 Asn Trp Ile Met Gln Phe Lys Ile Ser Val Gly Cys Lys Val Pro Glu
 2755 2760 2765
 Lys Ile Ala Gln Asn Gln Ile His Val Gln Phe Ser Thr Asp Phe Gly
 2770 2775 2780
 Val Ser Trp Ser Tyr Leu Val Pro Gln Cys Leu Pro Ala Asp Pro Lys
 785 2790 2795 2800
 Cys Ser Gly Ser Val Ser Gln Pro Ser Val Phe Phe Pro Thr Glu Gly

2805	2810	2815
Trp Lys Arg Ile Thr Tyr Pro Leu Pro Glu Ser Leu Thr Gly Asn Pro		
2820	2825	2830
Val Arg Phe Arg Phe Tyr Gln Lys Tyr Ser Asp Val Gln Trp Ala Ile		
2835	2840	2845
Asp Asn Phe Tyr Leu Gly Pro Gly Cys Leu Asp Asn Cys Gly Gly His		
2850	2855	2860
Gly Asp Cys Leu Lys Glu Gln Cys Ile Cys Asp Pro Gly Tyr Ser Gly		
865	2870	2875
Pro Asn Cys Tyr Leu Thr His Ser Leu Lys Thr Phe Leu Lys Glu Arg		2880
2885	2890	2895
Phe Asp Ser Glu Glu Ile Lys Pro Asp Leu Trp Met Ser Leu Glu Gly		
2900	2905	2910
Gly Ser Thr Cys Thr Glu Cys Gly Val Leu Ala Glu Asn Thr Ala Leu		
2915	2920	2925
Tyr Phe Gly Gly Ser Thr Val Arg Gln Ala Ile Thr Gln Asp Leu Asp		
2930	2935	2940
Leu Arg Gly Ala Lys Phe Leu Gln Tyr Trp Gly Arg Ile Gly Ser Glu		
945	2950	2955
Asn Asn Met Thr Ser Cys His Arg Pro Val Cys Arg Lys Glu Gly Val		2960
2965	2970	2975
Leu Leu Asp Phe Ser Thr Asp Gly Gly Ile Thr Trp Thr Leu Leu His		
2980	2985	2990
Glu Met Asp Phe Gln Lys Tyr Ile Ser Val Arg His Asp Tyr Ile Leu		
2995	3000	3005
Leu Pro Glu Gly Ala Leu Thr Asn Thr Thr Arg Leu Arg Trp Trp Gln		
3010	3015	3020
Pro Phe Val Ile Ser Asn Gly Leu Val Val Ser Gly Val Glu Arg Ala		
025	3030	3035
		3040

Gln Trp Ala Leu Asp Asn Ile Leu Ile Gly Gly Ala Glu Ile Asn Pro
 3045 3050 3055
 Ser Gln Leu Val Asp Thr Phe Asp Asp Glu Gly Ser Ser His Glu Glu
 3060 3065 3070
 Asn Trp Ser Phe Tyr Pro Asn Ala Val Arg Thr Ala Gly Phe Cys Gly
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 Leu His Ser Val Met Leu Glu Tyr Thr Lys Asp Ala Arg Ser Asp Ser
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 Trp Gln Leu Val Gln Thr Gln Cys Leu Pro Ser Ser Ser Asn Ser Ile
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 Gly Cys Ser Pro Phe Gln Phe His Glu Ala Thr Ile Tyr Asn Ala Val
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 Asn Ser Ser Ser Trp Lys Arg Ile Thr Ile Gln Leu Pro Asp His Val
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 Ser Ser Ser Ala Thr Gln Phe Arg Trp Ile Gln Lys Gly Glu Glu Thr
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 Glu Lys Gln Ser Trp Ala Ile Asp His Val Tyr Ile Gly Glu Ala Cys
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 Pro Lys Leu Cys Ser Gly His Gly Tyr Cys Thr Thr Gly Ala Val Cys
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 Glu Leu Pro Ser Tyr Ile Lys Asp Asn Phe Glu Ser Ala Arg Val Thr

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 Gly Gln Leu Ala Pro Tyr Ala His Gly Asp Ser Leu Tyr Phe Asn Gly
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 Cys Gln Ile Arg Gln Ala Ala Thr Lys Pro Leu Asp Leu Thr Arg Ala
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 Ser Lys Ile Met Phe Val Leu Gln Ile Gly Ser Pro Ala Gln Thr Asp
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 Ser Cys Asn Ser Asp Leu Ser Gly Pro His Thr Val Asp Lys Ala Val
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 Pro Arg His Asn Gly Thr Gly His Asp Gln Trp Ala Leu Asp His Val
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 Glu Val Val Leu Val Ser Thr Arg Lys Gln Asn Tyr Met Met Asn Phe
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<210> 130

<211> 483

<212> DNA

<213> Mus musculus

<400> 130

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<213> Mus musculus

<220>

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<400> 131

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Met Cys Cys Ser Glu Arg Leu Leu Gly Leu Pro Gln Pro

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5

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gta gag atg gaa gca ccg gac gag gcc gaa gga ctc ccc agc aag cag 579

Val Glu Met Glu Ala Pro Asp Glu Ala Glu Gly Leu Pro Ser Lys Gln

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20

25

aaa gag atg cca cca ccc ccg cca ccc tca ccg ccc tct gag cca gct 627

Lys Glu Met Pro Pro Pro Pro Pro Ser Pro Pro Ser Glu Pro Ala

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35

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45

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Gln Lys Leu Pro Pro Gln Gly Ala Gly Ser His Ser Leu Thr Val Arg

50

55

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agc agc ctg tgc ctg ttt gct gcc tct cag ttc ctg ctt gcc tgt ggg 723

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Val Leu Trp Leu Ser Gly His Gly His Ser Trp Leu Gln Asn Thr Thr

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85

90

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95

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105

gcc tgg ctg ggt tct ggg acc tgg ggg ata cca agt ctg ctg cta gtc 867

Ala Trp Leu Gly Ser Gly Thr Trp Gly Ile Pro Ser Leu Leu Leu Val

110

115

120

125

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Ser Leu Thr Val Ser Leu Val Ile Val Thr Thr Leu Val Trp His Leu

130

135

140

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 Gly Phe Gly Tyr Leu Val Ser Pro Arg Glu Glu Ser Ala His Glu Tyr
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 ctg ctc agc gcc tcc cgt gtc ctc cgg gca gaa gag cta cat gaa aag 1299
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 Ala Leu Asp Pro Phe Leu Leu Gln Ala Glu Phe Phe Glu Ile Pro Met
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 Asn Phe Val Asp Pro Lys Glu Tyr Asp Ile Pro Gly Leu Val Arg Lys

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Asn Arg Tyr Lys Thr Ile Leu Pro Asn Pro His Ser Arg Val Arg Leu			
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Thr Ser Pro Asp Pro Glu Asp Pro Leu Ser Ser Tyr Ile Asn Ala Asn			
320	325	330	
tac atc cgg ggc tac agt ggg gag gag aag gtg tac atc gcc acg cag			1539
Tyr Ile Arg Gly Tyr Ser Gly Glu Glu Lys Val Tyr Ile Ala Thr Gln			
335	340	345	
gga ccc atc gtc agc act gtg gcc gac ttt tgg cgc atg gtg tgg cag			1587
Gly Pro Ile Val Ser Thr Val Ala Asp Phe Trp Arg Met Val Trp Gln			
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gag cgc aca ccc atc atc gtc atg atc acc aac atc gag gag atg aac			1635
Glu Arg Thr Pro Ile Ile Val Met Ile Thr Asn Ile Glu Glu Met Asn			
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Glu Lys Cys Thr Glu Tyr Trp Pro Glu Glu Gln Val Val His Asp Gly			
385	390	395	
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Tyr Trp Phe Thr Ser Trp Pro Asp Gln Lys Thr Pro Asp Arg Ala Pro			
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 Arg Thr Gly Cys Phe Ile Ala Thr Ser Ile Cys Cys Gln Gln Leu Arg
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 Arg Glu Gly Val Val Asp Ile Leu Lys Thr Thr Cys Gln Leu Arg Gln
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<210> 132

<211> 541

<212> PRT

<213> Mus musculus

<400> 132

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Pro	Pro	Pro	Pro	Pro	Pro	Ser	Pro	Pro	Ser	Glu	Pro	Ala	Gln	Lys	Leu
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Pro	Pro	Gln	Gly	Ala	Gly	Ser	His	Ser	Leu	Thr	Val	Arg	Ser	Ser	Leu
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Cys	Leu	Phe	Ala	Ala	Ser	Gln	Phe	Leu	Leu	Ala	Cys	Gly	Val	Leu	Trp
			65				70				75			80	
Leu	Ser	Gly	His	Gly	His	Ser	Trp	Leu	Gln	Asn	Thr	Thr	Asp	Leu	Ile
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Ser	Ser	Ser	Leu	Thr	Val	Leu	Asn	His	Leu	Gly	Pro	Val	Ala	Trp	Leu
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 Val Ser Arg Gln Pro Ser Phe Thr Tyr Ser Glu Trp Met Glu Glu Lys
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 Val Glu Asp Asp Phe Leu Asp Leu Asp Ala Val Pro Glu Thr Pro Val
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 Thr Val Lys Ser Met Gly Leu Gln Glu Arg Arg Gly Ser Asn Val Ser
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 225 230 235 240
 Tyr Leu Val Ser Pro Arg Glu Glu Ser Ala His Glu Tyr Leu Leu Ser
 245 250 255
 Ala Ser Arg Val Leu Arg Ala Glu Glu Leu His Glu Lys Ala Leu Asp
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 Pro Phe Leu Leu Gln Ala Glu Phe Phe Glu Ile Pro Met Asn Phe Val
 275 280 285
 Asp Pro Lys Glu Tyr Asp Ile Pro Gly Leu Val Arg Lys Asn Arg Tyr
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 Lys Thr Ile Leu Pro Asn Pro His Ser Arg Val Arg Leu Thr Ser Pro
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 Asp Pro Glu Asp Pro Leu Ser Ser Tyr Ile Asn Ala Asn Tyr Ile Arg
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 Gly Tyr Ser Gly Glu Glu Lys Val Tyr Ile Ala Thr Gln Gly Pro Ile
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 Val Ser Thr Val Ala Asp Phe Trp Arg Met Val Trp Gln Glu Arg Thr

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Ser Leu Arg Arg Gly Thr Glu Glu Arg Thr Leu Lys His Tyr Trp Phe		
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Thr Ser Trp Pro Asp Gln Lys Thr Pro Asp Arg Ala Pro Pro Leu Leu		
	435	440
		445
His Leu Val Arg Glu Val Glu Glu Ala Ala Gln Gln Glu Gly Pro His		
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Cys Ser Pro Ile Ile Val His Cys Ser Ala Gly Ile Gly Arg Thr Gly		
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Cys Phe Ile Ala Thr Ser Ile Cys Cys Gln Gln Leu Arg Arg Glu Gly		
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		495
Val Val Asp Ile Leu Lys Thr Thr Cys Gln Leu Arg Gln Asp Arg Gly		
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Gly Met Ile Gln Thr Cys Glu Gln Tyr Gln Phe Val His His Ala Met		
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<211> 715

<212> DNA

<213> Mus musculus

<400> 133

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<211> 12410

<212> DNA

<213> Mus musculus

<400> 134

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ttg ctg tcc ttt aca agc ctc ttt tac atc ctc tcc atc gtc ttt gct	495		
Leu Leu Ser Phe Thr Ser Leu Phe Tyr Ile Leu Ser Ile Val Phe Ala			
130	135	140	
gcg ctg ctc tac gtc ttc tac acc aag cct gac gac tgc aca gaa aac	543		
Ala Leu Leu Tyr Val Phe Tyr Thr Lys Pro Asp Asp Cys Thr Glu Asn			
145	150	155	
aag gtc ttc atc agc ctc aac ctg att ttt tgt gtt gca gtt tct att	591		
Lys Val Phe Ile Ser Leu Asn Leu Ile Phe Cys Val Ala Val Ser Ile			
160	165	170	
gtg tcc atc ctc cct aaa gtt cag gaa cat cag cct cgc tct ggc ctc	639		
Val Ser Ile Leu Pro Lys Val Gln Glu His Gln Pro Arg Ser Gly Leu			
175	180	185	190
ctg cag tcc tcc atc atc act ctg tac acc ctt tac ctc acg tgg tca	687		

Leu Gln Ser Ser Ile Ile Thr Leu Tyr Thr Leu Tyr Leu Thr Trp Ser
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 gcc atg acc aat gaa cct gag cgg tcc tgc aat ccc tcc tta atg agc 735
 Ala Met Thr Asn Glu Pro Glu Arg Ser Cys Asn Pro Ser Leu Met Ser
 210 215 220
 atc atc aca cac tta act tca cca act gtg tct cct gca aat tca act 783
 Ile Ile Thr His Leu Thr Ser Pro Thr Val Ser Pro Ala Asn Ser Thr
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 act ctt gct cct gcc tat cgt cgg ccg tca cag agt ggg cac ttt atg 831
 Thr Leu Ala Pro Ala Tyr Arg Pro Pro Ser Gln Ser Gly His Phe Met
 240 245 250
 aat ttg gat gat att tgg gga ctg att atc ttt gtt ttc tgc ctt ata 879
 Asn Leu Asp Asp Ile Trp Gly Leu Ile Ile Phe Val Phe Cys Leu Ile
 255 260 265 270
 tat tct agc ttc cgt act tgc agc aac agc caa gtt aac aag ctg acc 927
 Tyr Ser Ser Phe Arg Thr Ser Ser Asn Ser Gln Val Asn Lys Leu Thr
 275 280 285
 ctc tct ggg agt gac agt gtt atc ctt ggt gat acc acc aat gga gcc 975
 Leu Ser Gly Ser Asp Ser Val Ile Leu Gly Asp Thr Thr Asn Gly Ala
 290 295 300
 aat gat gaa gag gat gga cag cca cgg agg gct gta gac aat gag aag 1023
 Asn Asp Glu Glu Asp Gly Gln Pro Arg Arg Ala Val Asp Asn Glu Lys
 305 310 315
 gag ggg gtg cag tat agc tac tcc ttt ttc cac ttg atg ctc tgc tgt 1071
 Glu Gly Val Gln Tyr Ser Tyr Ser Phe Phe His Leu Met Leu Cys Cys
 320 325 330
 gcc tcc ttg tac atc atg atg acc ata acc agc tgg tac agc cct gat 1119
 Ala Ser Leu Tyr Ile Met Met Thr Ile Thr Ser Trp Tyr Ser Pro Asp
 335 340 345 350

gcc aaa ttc cag aag gta tcc agc aag tgg cta gct gtc tgg ttc aaa 1167
 Ala Lys Phe Gln Lys Val Ser Ser Lys Trp Leu Ala Val Trp Phe Lys
 355 360 365
 atg ggc tcc agc tgg ttg tgc ctc ctc ctt tac ctc tgg act ctt gtg 1215
 Met Gly Ser Ser Trp Leu Cys Leu Leu Leu Tyr Leu Trp Thr Leu Val
 370 375 380
 gct ccc ctg gtc ctc aca ggt cgg gac ttc agc tga gctcagtg 1261
 Ala Pro Leu Val Leu Thr Gly Arg Asp Phe Ser
 385 390
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<211> 393

<212> PRT

<213> Mus musculus

<400> 138

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 35 40 45
 Ala Val His Asn Gly Phe Trp Phe Phe Lys Ile Ala Ala Ile Ile Gly
 50 55 60
 Ile Met Ile Gly Ser Phe Tyr Ile Pro Gly Gly Ser Phe Thr Glu Val
 65 70 75 80
 Trp Phe Val Ala Gly Met Leu Gly Ala Ser Phe Phe Ile Ile Ile Gln
 85 90 95
 Leu Val Leu Leu Val Asp Met Ala His Ser Trp Asn Glu Leu Trp Val
 100 105 110
 Asn Arg Met Glu Glu Gly Asn Pro Arg Leu Trp Tyr Ala Ala Leu Leu
 115 120 125
 Ser Phe Thr Ser Leu Phe Tyr Ile Leu Ser Ile Val Phe Ala Ala Leu
 130 135 140
 Leu Tyr Val Phe Tyr Thr Lys Pro Asp Asp Cys Thr Glu Asn Lys Val
 145 150 155 160
 Phe Ile Ser Leu Asn Leu Ile Phe Cys Val Ala Val Ser Ile Val Ser
 165 170 175
 Ile Leu Pro Lys Val Gln Glu His Gln Pro Arg Ser Gly Leu Leu Gln
 180 185 190
 Ser Ser Ile Ile Thr Leu Tyr Thr Leu Tyr Leu Thr Trp Ser Ala Met
 195 200 205
 Thr Asn Glu Pro Glu Arg Ser Cys Asn Pro Ser Leu Met Ser Ile Ile
 210 215 220
 Thr His Leu Thr Ser Pro Thr Val Ser Pro Ala Asn Ser Thr Thr Leu

225 230 235 240
Ala Pro Ala Tyr Arg Pro Pro Ser Gln Ser Gly His Phe Met Asn Leu
 245 250 255
Asp Asp Ile Trp Gly Leu Ile Ile Phe Val Phe Cys Leu Ile Tyr Ser
 260 265 270
Ser Phe Arg Thr Ser Ser Asn Ser Gln Val Asn Lys Leu Thr Leu Ser
 275 280 285
Gly Ser Asp Ser Val Ile Leu Gly Asp Thr Thr Asn Gly Ala Asn Asp
 290 295 300
Glu Glu Asp Gly Gln Pro Arg Arg Ala Val Asp Asn Glu Lys Glu Gly
305 310 315 320
Val Gln Tyr Ser Tyr Ser Phe Phe His Leu Met Leu Cys Cys Ala Ser
 325 330 335
Leu Tyr Ile Met Met Thr Ile Thr Ser Trp Tyr Ser Pro Asp Ala Lys
 340 345 350
Phe Gln Lys Val Ser Ser Lys Trp Leu Ala Val Trp Phe Lys Met Gly
 355 360 365
Ser Ser Trp Leu Cys Leu Leu Leu Tyr Leu Trp Thr Leu Val Ala Pro
 370 375 380
Leu Val Leu Thr Gly Arg Asp Phe Ser
385 390

<210> 139

<211> 3512

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (2304)

<400> 139

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1 5 10 15	
cga ttg aat gat tct cac aaa cac aaa gat aaa cac aaa gat cga gaa	96
Arg Leu Asn Asp Ser His Lys His Lys Asp Lys His Lys Asp Arg Glu	
20 25 30	
cac cgg cat aag gag cac aag aag gat aag gat aag gac cgg gaa aag	144
His Arg His Lys Glu His Lys Lys Asp Lys Asp Lys Asp Arg Glu Lys	
35 40 45	
tct aag cat agc aac agt gaa cat aaa gat tct gaa aag aaa cac aaa	192
Ser Lys His Ser Asn Ser Glu His Lys Asp Ser Glu Lys Lys His Lys	
50 55 60	
gag aaa gag aaa acc aaa cac aaa gat ggc agc tca gaa aaa cat aaa	240
Glu Lys Glu Lys Thr Lys His Lys Asp Gly Ser Ser Glu Lys His Lys	
65 70 75 80	
gac aaa cat aaa gac aga gac aag gaa aga cga aag gag gaa aag att	288
Asp Lys His Lys Asp Arg Asp Lys Glu Arg Arg Lys Glu Glu Lys Ile	
85 90 95	
aga gct gct ggg gat gca aaa ata aag aag gaa aag gaa aat ggc ttc	336
Arg Ala Ala Gly Asp Ala Lys Ile Lys Lys Glu Lys Glu Asn Gly Phe	
100 105 110	
tct agt ccg cca cga att aaa gat gac cct gag gat gat ggc tat ttt	384
Ser Ser Pro Pro Arg Ile Lys Asp Asp Pro Glu Asp Asp Gly Tyr Phe	
115 120 125	
gct cct cca aaa gag gat att aag cca ttg aag agg ctt cga gat gaa	432
Ala Pro Pro Lys Glu Asp Ile Lys Pro Leu Lys Arg Leu Arg Asp Glu	

130	135	140	
gat gat gct gat tat aaa cct aag aaa att aag aca gaa gat atc aag			480
Asp Asp Ala Asp Tyr Lys Pro Lys Lys Ile Lys Thr Glu Asp Ile Lys			
145	150	155	160
aag gag aag aaa aga aaa tca gaa gag gaa gag gat ggt aaa ctt aaa			528
Lys Glu Lys Lys Arg Lys Ser Glu Glu Glu Glu Asp Gly Lys Leu Lys			
	165	170	175
aag ccc aag aat aaa gat aaa gat aaa aaa gtt gct gag cca gat aat			576
Lys Pro Lys Asn Lys Asp Lys Asp Lys Lys Val Ala Glu Pro Asp Asn			
	180	185	190
aag aaa aag aag ccg aaa aag gaa gag gaa cag aag tgg aaa tgg tgg			624
Lys Lys Lys Lys Pro Lys Lys Glu Glu Glu Gln Lys Trp Lys Trp Trp			
	195	200	205
gaa gaa gaa cgt tat cca gaa ggc atc aaa tgg aaa ttc cta gag cat			672
Glu Glu Glu Arg Tyr Pro Glu Gly Ile Lys Trp Lys Phe Leu Glu His			
	210	215	220
aaa ggg cct gtc ttc gct cca cca tat gag cct ctg cca gag agt gtc			720
Lys Gly Pro Val Phe Ala Pro Pro Tyr Glu Pro Leu Pro Glu Ser Val			
225	230	235	240
aag ttt tac tat gat ggt aaa gtt atg aag ctg agt cct aaa gca gaa			768
Lys Phe Tyr Tyr Asp Gly Lys Val Met Lys Leu Ser Pro Lys Ala Glu			
	245	250	255
gaa gta gct aca ttc ttt gca aaa atg ctt gac cac gaa tat act act			816
Glu Val Ala Thr Phe Phe Ala Lys Met Leu Asp His Glu Tyr Thr Thr			
	260	265	270
aag gaa ata ttc agg aaa aat ttc ttt aaa gat tgg aga aag gaa atg			864
Lys Glu Ile Phe Arg Lys Asn Phe Phe Lys Asp Trp Arg Lys Glu Met			
	275	280	285
act aat gac gga aaa aat acg att acc aac cta agc aaa tgc gac ttt			912

Thr Asn Asp Gly Lys Asn Thr Ile Thr Asn Leu Ser Lys Cys Asp Phe
 290 295 300
 aca cag atg agc cag tat ttc aaa gcg cag tca gaa gct cgg aaa cag 960
 Thr Gln Met Ser Gln Tyr Phe Lys Ala Gln Ser Glu Ala Arg Lys Gln
 305 310 315 320
 atg agc aag gaa gaa aaa ttg aaa atc aaa gaa gaa aat gaa aag tta 1008
 Met Ser Lys Glu Glu Lys Leu Lys Ile Lys Glu Glu Asn Glu Lys Leu
 325 330 335
 ttg aaa gaa tac ggc ttt tgt gta atg gat aat cat aga gag cgg att 1056
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 340 345 350
 gcc aac ttc aag ata gag cct ccg ggg ctt ttc cga ggc cga ggg aac 1104
 Ala Asn Phe Lys Ile Glu Pro Pro Gly Leu Phe Arg Gly Arg Gly Asn
 355 360 365
 cac ccc aag atg ggt atg ctg aag aga agg atc atg cct gag gac atc 1152
 His Pro Lys Met Gly Met Leu Lys Arg Arg Ile Met Pro Glu Asp Ile
 370 375 380
 atc atc aac tgt agc aaa gac gca aag gtt cct tct ccc cct cct gga 1200
 Ile Ile Asn Cys Ser Lys Asp Ala Lys Val Pro Ser Pro Pro Pro Gly
 385 390 395 400
 cat aaa tgg aag gaa gtc cga cat gat aac aag gtt act tgg ctg gtc 1248
 His Lys Trp Lys Glu Val Arg His Asp Asn Lys Val Thr Trp Leu Val
 405 410 415
 tcc tgg aca gag aat atc caa ggt tct atc aaa tat atc atg ctg aat 1296
 Ser Trp Thr Glu Asn Ile Gln Gly Ser Ile Lys Tyr Ile Met Leu Asn
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 Pro Ser Ser Arg Ile Lys Gly Glu Lys Asp Trp Gln Lys Tyr Glu Thr
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 Glu Asp Trp Lys Ser Lys Glu Met Lys Val Arg Gln Arg Ala Val Ala
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 Glu Gly Glu Thr Ala Asp Thr Val Gly Cys Cys Ser Leu Arg Val Glu
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 His Ile Asn Leu His Pro Glu Leu Asp Gly Gln Glu Tyr Val Val Glu
 515 520 525
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 Phe Asp Phe Pro Gly Lys Asp Ser Ile Arg Tyr Tyr Asn Lys Val Pro
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 Val Glu Lys Arg Val Phe Lys Asn Leu Gln Leu Phe Met Glu Asn Lys
 545 550 555 560
 cag cct gag gac gat ctt ttt gat cga ctt aat act ggt att cta aat 1728
 Gln Pro Glu Asp Asp Leu Phe Asp Arg Leu Asn Thr Gly Ile Leu Asn
 565 570 575
 aaa cat ctt cag gat ctc atg gag ggc ttg act gcc aag gtg ttc cgt 1776
 Lys His Leu Gln Asp Leu Met Glu Gly Leu Thr Ala Lys Val Phe Arg
 580 585 590
 acc tac aat gcc tcc atc aca cta cag cag cag ctt aaa gag ctc aca 1824
 Thr Tyr Asn Ala Ser Ile Thr Leu Gln Gln Gln Leu Lys Glu Leu Thr

595	600	605	
gcc cct gat gag aat gta cca gcg aag att cta tct tat aac cgt gcc	1872		
Ala Pro Asp Glu Asn Val Pro Ala Lys Ile Leu Ser Tyr Asn Arg Ala			
610	615	620	
aat cga gct gtt gca att ctt tgt aac cac cag agg gcg cca cca aag	1920		
Asn Arg Ala Val Ala Ile Leu Cys Asn His Gln Arg Ala Pro Pro Lys			
625	630	635	640
acc ttt gag aag tca atg atg aac ttg cag tct aag att gat gcc aag	1968		
Thr Phe Glu Lys Ser Met Met Asn Leu Gln Ser Lys Ile Asp Ala Lys			
645	650	655	
aaa gat cag tta gca gat gct cga agg gac ctg aaa agt gct aag gct	2016		
Lys Asp Gln Leu Ala Asp Ala Arg Arg Asp Leu Lys Ser Ala Lys Ala			
660	665	670	
gat gcc aaa gtc atg aag gat gca aag acc aag aag gta gta gag tca	2064		
Asp Ala Lys Val Met Lys Asp Ala Lys Thr Lys Lys Val Val Glu Ser			
675	680	685	
aaa aag aag gct gta cag aga cta gaa gag cag ttg atg aag ctg gaa	2112		
Lys Lys Lys Ala Val Gln Arg Leu Glu Glu Gln Leu Met Lys Leu Glu			
690	695	700	
gtt caa gcc aca gat cga gag gag aac aaa caa att gcc ttg ggg acc	2160		
Val Gln Ala Thr Asp Arg Glu Glu Asn Lys Gln Ile Ala Leu Gly Thr			
705	710	715	720
tcc aaa ctc aat tat ctg gac cct agg atc aca gtg gct tgg tgc aaa	2208		
Ser Lys Leu Asn Tyr Leu Asp Pro Arg Ile Thr Val Ala Trp Cys Lys			
725	730	735	
aag tgg ggg gtc cca att gag aag att tac aac aaa acc cag agg gag	2256		
Lys Trp Gly Val Pro Ile Glu Lys Ile Tyr Asn Lys Thr Gln Arg Glu			
740	745	750	
aag ttt gct tgg gcc att gat atg act gat gag gac tac gag ttt tga	2304		

Lys Phe Ala Trp Ala Ile Asp Met Thr Asp Glu Asp Tyr Glu Phe

755

760

765

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3512

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<211> 767

<212> PRT

<213> Mus musculus

<400> 140

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 His Arg His Lys Glu His Lys Lys Asp Lys Asp Lys Asp Arg Glu Lys
 35 40 45
 Ser Lys His Ser Asn Ser Glu His Lys Asp Ser Glu Lys Lys His Lys
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 Glu Lys Glu Lys Thr Lys His Lys Asp Gly Ser Ser Glu Lys His Lys
 65 70 75 80
 Asp Lys His Lys Asp Arg Asp Lys Glu Arg Arg Lys Glu Glu Lys Ile
 85 90 95
 Arg Ala Ala Gly Asp Ala Lys Ile Lys Lys Glu Lys Glu Asn Gly Phe
 100 105 110
 Ser Ser Pro Pro Arg Ile Lys Asp Asp Pro Glu Asp Asp Gly Tyr Phe
 115 120 125
 Ala Pro Pro Lys Glu Asp Ile Lys Pro Leu Lys Arg Leu Arg Asp Glu
 130 135 140
 Asp Asp Ala Asp Tyr Lys Pro Lys Lys Ile Lys Thr Glu Asp Ile Lys
 145 150 155 160
 Lys Glu Lys Lys Arg Lys Ser Glu Glu Glu Glu Asp Gly Lys Leu Lys
 165 170 175
 Lys Pro Lys Asn Lys Asp Lys Asp Lys Lys Val Ala Glu Pro Asp Asn
 180 185 190
 Lys Lys Lys Lys Pro Lys Lys Glu Glu Glu Gln Lys Trp Lys Trp Trp
 195 200 205
 Glu Glu Glu Arg Tyr Pro Glu Gly Ile Lys Trp Lys Phe Leu Glu His
 210 215 220

Lys Gly Pro Val Phe Ala Pro Pro Tyr Glu Pro Leu Pro Glu Ser Val
 225 230 235 240
 Lys Phe Tyr Tyr Asp Gly Lys Val Met Lys Leu Ser Pro Lys Ala Glu
 245 250 255
 Glu Val Ala Thr Phe Phe Ala Lys Met Leu Asp His Glu Tyr Thr Thr
 260 265 270
 Lys Glu Ile Phe Arg Lys Asn Phe Phe Lys Asp Trp Arg Lys Glu Met
 275 280 285
 Thr Asn Asp Gly Lys Asn Thr Ile Thr Asn Leu Ser Lys Cys Asp Phe
 290 295 300
 Thr Gln Met Ser Gln Tyr Phe Lys Ala Gln Ser Glu Ala Arg Lys Gln
 305 310 315 320
 Met Ser Lys Glu Glu Lys Leu Lys Ile Lys Glu Glu Asn Glu Lys Leu
 325 330 335
 Leu Lys Glu Tyr Gly Phe Cys Val Met Asp Asn His Arg Glu Arg Ile
 340 345 350
 Ala Asn Phe Lys Ile Glu Pro Pro Gly Leu Phe Arg Gly Arg Gly Asn
 355 360 365
 His Pro Lys Met Gly Met Leu Lys Arg Arg Ile Met Pro Glu Asp Ile
 370 375 380
 Ile Ile Asn Cys Ser Lys Asp Ala Lys Val Pro Ser Pro Pro Pro Gly
 385 390 395 400
 His Lys Trp Lys Glu Val Arg His Asp Asn Lys Val Thr Trp Leu Val
 405 410 415
 Ser Trp Thr Glu Asn Ile Gln Gly Ser Ile Lys Tyr Ile Met Leu Asn
 420 425 430
 Pro Ser Ser Arg Ile Lys Gly Glu Lys Asp Trp Gln Lys Tyr Glu Thr
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 Ala Arg Arg Leu Lys Lys Cys Val Asp Lys Ile Arg Asn Gln Tyr Arg

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Leu Tyr Phe Ile Asp Lys Leu Ala Leu Arg Ala Gly Asn Glu Lys Glu			
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Glu Gly Glu Thr Ala Asp Thr Val Gly Cys Cys Ser Leu Arg Val Glu			
	500	505	510
His Ile Asn Leu His Pro Glu Leu Asp Gly Gln Glu Tyr Val Val Glu			
	515	520	525
Phe Asp Phe Pro Gly Lys Asp Ser Ile Arg Tyr Tyr Asn Lys Val Pro			
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Val Glu Lys Arg Val Phe Lys Asn Leu Gln Leu Phe Met Glu Asn Lys			
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Gln Pro Glu Asp Asp Leu Phe Asp Arg Leu Asn Thr Gly Ile Leu Asn			
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Lys His Leu Gln Asp Leu Met Glu Gly Leu Thr Ala Lys Val Phe Arg			
	580	585	590
Thr Tyr Asn Ala Ser Ile Thr Leu Gln Gln Gln Leu Lys Glu Leu Thr			
	595	600	605
Ala Pro Asp Glu Asn Val Pro Ala Lys Ile Leu Ser Tyr Asn Arg Ala			
	610	615	620
Asn Arg Ala Val Ala Ile Leu Cys Asn His Gln Arg Ala Pro Pro Lys			
625	630	635	640
Thr Phe Glu Lys Ser Met Met Asn Leu Gln Ser Lys Ile Asp Ala Lys			
	645	650	655
Lys Asp Gln Leu Ala Asp Ala Arg Arg Asp Leu Lys Ser Ala Lys Ala			
	660	665	670
Asp Ala Lys Val Met Lys Asp Ala Lys Thr Lys Lys Val Val Glu Ser			
	675	680	685

Lys Lys Lys Ala Val Gln Arg Leu Glu Glu Gln Leu Met Lys Leu Glu

690

695

700

Val Gln Ala Thr Asp Arg Glu Glu Asn Lys Gln Ile Ala Leu Gly Thr

705

710

715

720

Ser Lys Leu Asn Tyr Leu Asp Pro Arg Ile Thr Val Ala Trp Cys Lys

725

730

735

Lys Trp Gly Val Pro Ile Glu Lys Ile Tyr Asn Lys Thr Gln Arg Glu

740

745

750

Lys Phe Ala Trp Ala Ile Asp Met Thr Asp Glu Asp Tyr Glu Phe

755

760

765

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<211> 218

<212> DNA

<213> Mus musculus

<400> 141

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<210> 142

<211> 3227

<212> DNA

<213> Mus musculus

<220>

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<400> 142

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 ctccgtgctt ttagccctcc agagccaaag.aaacccaga caacagacgc ccagacgcag 240
 cagcgtatag cagtaactcc ccagctcggt ttccgtgccg tagtttacag tatttaattt 300
 tatataatat atactatitta ttatagcatt ttgataacctc attccgttta cacatctcaa 360
 aagccgctta gtaattctct tattatttaa agaaccacta cactagaga atg gaa tct 418

Met Glu Ser

1

act gtg gca acg att act agt acc cta gct gct gtt act gct tcc gct 466
 Thr Val Ala Thr Ile Thr Ser Thr Leu Ala Ala Val Thr Ala Ser Ala

5

10

15

cca ccg aag tat gac aat cta tgg atg ctc atc ctg ggc ttc atc att 514
 Pro Pro Lys Tyr Asp Asn Leu Trp Met Leu Ile Leu Gly Phe Ile Ile

20

25

30

35

gca ttt gtc ttg gca ttc tcc gtg gga gcc aat gat gta gca aat tcg 562
 Ala Phe Val Leu Ala Phe Ser Val Gly Ala Asn Asp Val Ala Asn Ser

40

45

50

ttc ggt aca gct gta ggc tca ggt gta gtg acc ctg aag caa gcc tgc 610
 Phe Gly Thr Ala Val Gly Ser Gly Val Val Thr Leu Lys Gln Ala Cys

55

60

65

atc tta gct agc atc ttc gaa act gtg ggc tcc gcc ttg ctg ggg gcc 658
 Ile Leu Ala Ser Ile Phe Glu Thr Val Gly Ser Ala Leu Leu Gly Ala

70

75

80

aaa gtg agc gaa acc atc cgg aac ggc ttg ata gat gtg gag ctg tac 706
 Lys Val Ser Glu Thr Ile Arg Asn Gly Leu Ile Asp Val Glu Leu Tyr

85	90	95	
aac gaa act caa gat ctg ctc atg gct ggc tcc gtc agt gct atg ttt	754		
Asn Glu Thr Gln Asp Leu Leu Met Ala Gly Ser Val Ser Ala Met Phe			
100	105	110	115
ggc tct gct gtg tgg cag ctc gtg gct tcg ttt ttg aag ctt ccg att	802		
Gly Ser Ala Val Trp Gln Leu Val Ala Ser Phe Leu Lys Leu Pro Ile			
120	125	130	
tct ggg acc cat tgt att gtc ggt gca acc att ggt ttc tcc ctt gtg	850		
Ser Gly Thr His Cys Ile Val Gly Ala Thr Ile Gly Phe Ser Leu Val			
135	140	145	
gca aat ggg cag aag ggt gtc aag tgg tct gaa ctg ata aaa att gtg	898		
Ala Asn Gly Gln Lys Gly Val Lys Trp Ser Glu Leu Ile Lys Ile Val			
150	155	160	
atg tcg tgg ttc gtc tct ccg ctg ctt tct ggt att atg tct gga att	946		
Met Ser Trp Phe Val Ser Pro Leu Leu Ser Gly Ile Met Ser Gly Ile			
165	170	175	
tta ttc ttc ctt gtt cgt gcg ttc atc ctc cgt aag gca gat ccg gtt	994		
Leu Phe Phe Leu Val Arg Ala Phe Ile Leu Arg Lys Ala Asp Pro Val			
180	185	190	195
cct aat ggc tta cga gct tta cca att ttt tat gcc tgc aca atc gga	1042		
Pro Asn Gly Leu Arg Ala Leu Pro Ile Phe Tyr Ala Cys Thr Ile Gly			
200	205	210	
atc aac ctc ttt tcc att atg tat act gga gca ccg ttg ctg ggc ttt	1090		
Ile Asn Leu Phe Ser Ile Met Tyr Thr Gly Ala Pro Leu Leu Gly Phe			
215	220	225	
gac aaa ctt cct ctg tgg ggt acc atc ctc atc tcg gtg gga tgt gca	1138		
Asp Lys Leu Pro Leu Trp Gly Thr Ile Leu Ile Ser Val Gly Cys Ala			
230	235	240	
ggt ttc tgt gcc ctt atc gtc tgg ttc ttt gta tgt ccc agg atg aag	1186		

Val Phe Cys Ala Leu Ile Val Trp Phe Phe Val Cys Pro Arg Met Lys
 245 250 255
 aga aaa att gaa cga gaa gta aag tct agt ccg tct gaa agt ccc tta 1234
 Arg Lys Ile Glu Arg Glu Val Lys Ser Ser Pro Ser Glu Ser Pro Leu
 260 265 270 275
 atg gaa aag aag agc aac tta aaa gaa gac cat gaa gaa aca aag atg 1282
 Met Glu Lys Lys Ser Asn Leu Lys Glu Asp His Glu Glu Thr Lys Met
 280 285 290
 gct cct gga gac gtt gag cat agg aat cct gtg tct gag gta gtg tgt 1330
 Ala Pro Gly Asp Val Glu His Arg Asn Pro Val Ser Glu Val Val Cys
 295 300 305
 gcc act ggg cca ctc cgg gct gtg gtg gag gag agg acg gtg tca ttc 1378
 Ala Thr Gly Pro Leu Arg Ala Val Val Glu Glu Arg Thr Val Ser Phe
 310 315 320
 aaa ctt ggt gac ctg gag gag gct ccg gag cga gag cgg ctt ccc atg 1426
 Lys Leu Gly Asp Leu Glu Glu Ala Pro Glu Arg Glu Arg Leu Pro Met
 325 330 335
 gac ctg aag gag gag acc agc ata gac agc acc atc aat ggt gca gtg 1474
 Asp Leu Lys Glu Glu Thr Ser Ile Asp Ser Thr Ile Asn Gly Ala Val
 340 345 350 355
 cag ttg cct aat ggg aac ctt gtt cag ttc agt caa act gtc agc aac 1522
 Gln Leu Pro Asn Gly Asn Leu Val Gln Phe Ser Gln Thr Val Ser Asn
 360 365 370
 cag atc aac tcc agt ggc cac tat cag tat cac acc gtg cac aag gat 1570
 Gln Ile Asn Ser Ser Gly His Tyr Gln Tyr His Thr Val His Lys Asp
 375 380 385
 tct ggc ttg tac aag gag ctg ctc cat aag tta cat ctg gcc aag gtg 1618
 Ser Gly Leu Tyr Lys Glu Leu Leu His Lys Leu His Leu Ala Lys Val
 390 395 400

gga gac tgc atg gga gat tct ggg gac aag ccc ttg aga cgc aac aac 1666
 Gly Asp Cys Met Gly Asp Ser Gly Asp Lys Pro Leu Arg Arg Asn Asn
 405 410 415
 agc tac act tcc tac act atg gca ata tgt ggc atg ccc ctg gat tca 1714
 Ser Tyr Thr Ser Tyr Thr Met Ala Ile Cys Gly Met Pro Leu Asp Ser
 420 425 430 435
 ttc cgt gcc aaa gaa ggt gaa caa aag gga gat gaa atg gag acg ctg 1762
 Phe Arg Ala Lys Glu Gly Glu Gln Lys Gly Asp Glu Met Glu Thr Leu
 440 445 450
 aca tgg cct aat gca gat acc aag aag cgg att cga atg gac agt tac 1810
 Thr Trp Pro Asn Ala Asp Thr Lys Lys Arg Ile Arg Met Asp Ser Tyr
 455 460 465
 acc agt tac tgc aat gcc gtg tct gac ctt cac tcc gag tct gag atg 1858
 Thr Ser Tyr Cys Asn Ala Val Ser Asp Leu His Ser Glu Ser Glu Met
 470 475 480
 gac atg agt gtg aag gct gag atg ggc ctg ggt gac aga aaa gga agc 1906
 Asp Met Ser Val Lys Ala Glu Met Gly Leu Gly Asp Arg Lys Gly Ser
 485 490 495
 agt ggc tct ctt gaa gaa tgg tat gac cag gat aag cct gaa gtg tcc 1954
 Ser Gly Ser Leu Glu Glu Trp Tyr Asp Gln Asp Lys Pro Glu Val Ser
 500 505 510 515
 ctt ctc ttc cag ttc ctg cag atc ctt aca gcc tgc ttt ggg tca ttt 2002
 Leu Leu Phe Gln Phe Leu Gln Ile Leu Thr Ala Cys Phe Gly Ser Phe
 520 525 530
 gcc cat ggt ggc aat gac gtc agc aat gcc atc ggc cct ctg gtt gct 2050
 Ala His Gly Gly Asn Asp Val Ser Asn Ala Ile Gly Pro Leu Val Ala
 535 540 545
 ttg tat ctt gtt tat aaa caa gaa gcc tct aca aaa gcg gca aca ccc 2098
 Leu Tyr Leu Val Tyr Lys Gln Glu Ala Ser Thr Lys Ala Ala Thr Pro

550	555	560	
ata tgg ctt ctg ctt tat ggt ggt gtt ggc att tgc atg ggc ctg tgg	2146		
Ile Trp Leu Leu Leu Tyr Gly Gly Val Gly Ile Cys Met Gly Leu Trp			
565	570	575	
gtt tgg gga aga aga gtt atc cag acc atg ggg aag gac ctg acc cca	2194		
Val Trp Gly Arg Arg Val Ile Gln Thr Met Gly Lys Asp Leu Thr Pro			
580	585	590	595
atc aca ccc tcc agt ggt ttc agt att gaa ctg gcg tct gcc tta act	2242		
Ile Thr Pro Ser Ser Gly Phe Ser Ile Glu Leu Ala Ser Ala Leu Thr			
600	605	610	
gig gtc atc gca tca aac att ggc ctt ccc atc agc aca aca cat tgc	2290		
Val Val Ile Ala Ser Asn Ile Gly Leu Pro Ile Ser Thr Thr His Cys			
615	620	625	
aaa gtg ggc tct gtt gtg tct gtt ggc tgg ctc cga tca aag aag gct	2338		
Lys Val Gly Ser Val Val Ser Val Gly Trp Leu Arg Ser Lys Lys Ala			
630	635	640	
gtt gac tgg cga ctg ttt cga aac att ttt atg gcc tgg ttt gtc acg	2386		
Val Asp Trp Arg Leu Phe Arg Asn Ile Phe Met Ala Trp Phe Val Thr			
645	650	655	
gtc ccc atc tct ggg gtt atc agt gcc gct atc atg gca gta ttc aag	2434		
Val Pro Ile Ser Gly Val Ile Ser Ala Ala Ile Met Ala Val Phe Lys			
660	665	670	675
tac atc atc ctg cca gtg tga cgctgggggtt gaaagctgtg tcagtgtctg	2485		
Tyr Ile Ile Leu Pro Val			
680			
ggaccattgt acacattcct gttcctagga gaacgctcac agtgttgctg aagacaggca	2545		
agggtccttaa aggagccgtg ggaaggaagt gtaattttaca ctataattgc ttttgtgcta	2605		
aatatgactt atctcaaaaat tagctatgta aaatagccag gtttccattg attcattcca	2665		
aggctcccttt tctcctgggc tatgaattcc tgtacatatt tctctacttt tgtatcaggc	2725		

ctcaattcca gtaagtgtta atgttgtctg tgagataact taggtgggtt ctttttaaac 2785
 agccagcaga gccatttgat ggcatgtact gctttgtcgg cctcaccagc ttcttcccca 2845
 acatgcacag ggatttaaca acatgtaact gaagcttccc tccctcatag tctctcatag 2905
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 ttcttagagg gccgagaatc ttgggcacag tggaaatata agttttagt aacctctttg 3025
 caaacagttc acggacatgt tgctaagaag caggagagaca aagccccctgg cggttgtggt 3085
 tattcttctg agatttctgg cagtgtggga tgggtgaatg aagtggaatg tgaactttgg 3145
 gcaaattcaa tgggacagcc ttccatgttc atcgtctac ctcttaactg aataaaaagc 3205
 ctacagtttt taaaaaaaaa aa 3227

<210> 143

<211> 681

<212> PRT

<213> Mus musculus

<400> 143

Met Glu Ser Thr Val Ala Thr Ile Thr Ser Thr Leu Ala Ala Val Thr

1 5 10 15

Ala Ser Ala Pro Pro Lys Tyr Asp Asn Leu Trp Met Leu Ile Leu Gly

20 25 30

Phe Ile Ile Ala Phe Val Leu Ala Phe Ser Val Gly Ala Asn Asp Val

35 40 45

Ala Asn Ser Phe Gly Thr Ala Val Gly Ser Gly Val Val Thr Leu Lys

50 55 60

Gln Ala Cys Ile Leu Ala Ser Ile Phe Glu Thr Val Gly Ser Ala Leu

65 70 75 80

Leu Gly Ala Lys Val Ser Glu Thr Ile Arg Asn Gly Leu Ile Asp Val

85 90 95

Glu Leu Tyr Asn Glu Thr Gln Asp Leu Leu Met Ala Gly Ser Val Ser

100	105	110	
Ala Met Phe Gly Ser Ala Val Trp Gln Leu Val Ala Ser Phe Leu Lys			
115	120	125	
Leu Pro Ile Ser Gly Thr His Cys Ile Val Gly Ala Thr Ile Gly Phe			
130	135	140	
Ser Leu Val Ala Asn Gly Gln Lys Gly Val Lys Trp Ser Glu Leu Ile			
145	150	155	160
Lys Ile Val Met Ser Trp Phe Val Ser Pro Leu Leu Ser Gly Ile Met			
165	170	175	
Ser Gly Ile Leu Phe Phe Leu Val Arg Ala Phe Ile Leu Arg Lys Ala			
180	185	190	
Asp Pro Val Pro Asn Gly Leu Arg Ala Leu Pro Ile Phe Tyr Ala Cys			
195	200	205	
Thr Ile Gly Ile Asn Leu Phe Ser Ile Met Tyr Thr Gly Ala Pro Leu			
210	215	220	
Leu Gly Phe Asp Lys Leu Pro Leu Trp Gly Thr Ile Leu Ile Ser Val			
225	230	235	240
Gly Cys Ala Val Phe Cys Ala Leu Ile Val Trp Phe Phe Val Cys Pro			
245	250	255	
Arg Met Lys Arg Lys Ile Glu Arg Glu Val Lys Ser Ser Pro Ser Glu			
260	265	270	
Ser Pro Leu Met Glu Lys Lys Ser Asn Leu Lys Glu Asp His Glu Glu			
275	280	285	
Thr Lys Met Ala Pro Gly Asp Val Glu His Arg Asn Pro Val Ser Glu			
290	295	300	
Val Val Cys Ala Thr Gly Pro Leu Arg Ala Val Val Glu Glu Arg Thr			
305	310	315	320
Val Ser Phe Lys Leu Gly Asp Leu Glu Glu Ala Pro Glu Arg Glu Arg			
325	330	335	

Leu Pro Met Asp Leu Lys Glu Glu Thr Ser Ile Asp Ser Thr Ile Asn
 340 345 350
 Gly Ala Val Gln Leu Pro Asn Gly Asn Leu Val Gln Phe Ser Gln Thr
 355 360 365
 Val Ser Asn Gln Ile Asn Ser Ser Gly His Tyr Gln Tyr His Thr Val
 370 375 380
 His Lys Asp Ser Gly Leu Tyr Lys Glu Leu Leu His Lys Leu His Leu
 385 390 395 400
 Ala Lys Val Gly Asp Cys Met Gly Asp Ser Gly Asp Lys Pro Leu Arg
 405 410 415
 Arg Asn Asn Ser Tyr Thr Ser Tyr Thr Met Ala Ile Cys Gly Met Pro
 420 425 430
 Leu Asp Ser Phe Arg Ala Lys Glu Gly Glu Gln Lys Gly Asp Glu Met
 435 440 445
 Glu Thr Leu Thr Trp Pro Asn Ala Asp Thr Lys Lys Arg Ile Arg Met
 450 455 460
 Asp Ser Tyr Thr Ser Tyr Cys Asn Ala Val Ser Asp Leu His Ser Glu
 465 470 475 480
 Ser Glu Met Asp Met Ser Val Lys Ala Glu Met Gly Leu Gly Asp Arg
 485 490 495
 Lys Gly Ser Ser Gly Ser Leu Glu Glu Trp Tyr Asp Gln Asp Lys Pro
 500 505 510
 Glu Val Ser Leu Leu Phe Gln Phe Leu Gln Ile Leu Thr Ala Cys Phe
 515 520 525
 Gly Ser Phe Ala His Gly Gly Asn Asp Val Ser Asn Ala Ile Gly Pro
 530 535 540
 Leu Val Ala Leu Tyr Leu Val Tyr Lys Gln Glu Ala Ser Thr Lys Ala
 545 550 555 560
 Ala Thr Pro Ile Trp Leu Leu Leu Tyr Gly Gly Val Gly Ile Cys Met

	565		570		575										
Gly	Leu	Trp	Val	Trp	Gly	Arg	Arg	Val	Ile	Gln	Thr	Met	Gly	Lys	Asp
	580		585		590										
Leu	Thr	Pro	Ile	Thr	Pro	Ser	Ser	Gly	Phe	Ser	Ile	Glu	Leu	Ala	Ser
	595		600		605										
Ala	Leu	Thr	Val	Val	Ile	Ala	Ser	Asn	Ile	Gly	Leu	Pro	Ile	Ser	Thr
	610		615		620										
Thr	His	Cys	Lys	Val	Gly	Ser	Val	Val	Ser	Val	Gly	Trp	Leu	Arg	Ser
625			630		635									640	
Lys	Lys	Ala	Val	Asp	Trp	Arg	Leu	Phe	Arg	Asn	Ile	Phe	Met	Ala	Trp
	645		650		655										
Phe	Val	Thr	Val	Pro	Ile	Ser	Gly	Val	Ile	Ser	Ala	Ala	Ile	Met	Ala
	660		665		670										
Val	Phe	Lys	Tyr	Ile	Ile	Leu	Pro	Val							
	675		680												

<210> 144

<211> 618

<212> DNA

<213> Mus musculus

<400> 144

tgtaaagagt gcgggaaagc ttttaatcag aactcacatc tcatccagca tatgagagtc 60
 catagcggag aaaaaccctt cgaatgcaaa gagtgtggaa agaccttcgg gactaactcc 120
 agccttcgaa ggcaccagag aattcacgcc ggagagaaac cctttgcttg cactgagtgt 180
 ggcaaggcct tcattcagag ctacacatctg attcaccatc acagaatcca tactggagaa 240
 agaccttata aatgtgaaga gtgtggtaaa gccttcagtc agaactcagc ccttattctg 300
 caccagagaa tccacactgg agagaaaccc tatgagtgtg acgagtgtgg gaagaccttc 360
 cgggttagct cacagctcat ccagcatcag agaattcaca cagaggaaag ataccacgag 420

tgcagtgagt gcggaagaac ttcaagcaca gctccggcct catcagacat cagaaaatcc 480
acacgggaga aaagccctat ctgtgtaatg aatgtgggaa aggcttttgt cagagctcgg 540
agcttatccc gcatcaagaa tcacacaggg gacaagccct atgagtgagt gaatgcggaa 600
aaacgtttgc cagactca 618

<210> 145

<211> 347

<212> DNA

<213> Mus musculus

<400> 145

ggaggggctg tcggcggcgg ctgcccgaagg acggtttgca ggatgctaag tgcctagagc 60
caatcccaaa tcggcggcgc gcttcctcgc tgtcccgta cgcgcagccg agcctatcag 120
tggtgccggg agtacctggg cggggctggc gccgagccgg ccggaggagc tgagcgtttg 180
tcccgtgagc ggaggccca gcaacctgct ctcccgatgc tcaactaccg accacgtacc 240
cagtgtgggc ggggagcccg ggaggtgctg ctacgactct acggggccat cctgcagggt 300
gtagactcct tggattaga aagcgtgatg ttccgcatte tcgcaga 347

<210> 146

<211> 532

<212> DNA

<213> Mus musculus

<400> 146

catgttttcc tctttttacc ctacagtga agatgtctct gaacggacag cgcggggagt 60
gctgggtgtg gaaccccaat accgggaagc ccatccaggg agtcccacc atccggggag 120
accccgagtg ccatctcttc tacaacgagc agcaggagac tggtagggcc catgccccaa 180
gltgtcagta aacccaccg agtcggtccg tcggttcccc atcccgaaca ccagcagaaa 240
tggagggcgc tagggtagcg ggtgtggagg agttcccagt ttgacacat gtattttat 300

ttggaaagag accaacactg agctcagaag cccccctctg acccccccca gcggcigtta 360
 actgaacctc ctgtcttctg ttagagaggg gggaaggggt ggtaaggagg gcactgggta 420
 caggccctggg aatggggaaa gaaattttta ttttgaatc cctgtgtctc ttttgcttaa 480
 gattaaagga aggaaaataa aagctgcctg tgcttactt gagcttttgg gg 532

<210> 147

<211> 878

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (55).. (771)

<400> 147

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Met
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 gcg gtg gaa gga gga atg aag tgt gtc aag ttt ttg ctc tac gtt ctc 105
 Ala Val Glu Gly Gly Met Lys Cys Val Lys Phe Leu Leu Tyr Val Leu
5 10 15
 ctg ctg gcc ttc tgc gcc tgt gca gtg gga ttg atc gcc att ggt gta 153
 Leu Leu Ala Phe Cys Ala Cys Ala Val Gly Leu Ile Ala Ile Gly Val
20 25 30
 gcg gtt cag gtt gtc ttg aag cag gcc att acc cat gag act act gct 201
 Ala Val Gln Val Val Leu Lys Gln Ala Ile Thr His Glu Thr Thr Ala
35 40 45
 ggc tcg ctg ttg cct gtg gtc atc att gca gtg ggt gcc ttc ctc ttc 249
 Gly Ser Leu Leu Pro Val Val Ile Ile Ala Val Gly Ala Phe Leu Phe

50	55	60	65	
ctg gtg gcc ttt gtg ggc tgc tgt ggg gcc tgc aag gag aac tac tgt	297			
Leu Val Ala Phe Val Gly Cys Cys Gly Ala Cys Lys Glu Asn Tyr Cys				
70	75	80		
ctc atg att aca ttt gcc atc ttc ttg tct ctt atc atg ctt gtg gag	345			
Leu Met Ile Thr Phe Ala Ile Phe Leu Ser Leu Ile Met Leu Val Glu				
85	90	95		
gtg gct gtg gcc att gct ggc tat gtg ttt aga gac cag gtg aag tca	393			
Val Ala Val Ala Ile Ala Gly Tyr Val Phe Arg Asp Gln Val Lys Ser				
100	105	110		
gag ttt aat aaa agc ttc cag cag cag atg cag aat tac ctt aaa gac	441			
Glu Phe Asn Lys Ser Phe Gln Gln Gln Met Gln Asn Tyr Leu Lys Asp				
115	120	125		
aac aaa aca gcc act att ttg gac aaa ttg cag aaa gaa aat aac tgc	489			
Asn Lys Thr Ala Thr Ile Leu Asp Lys Leu Gln Lys Glu Asn Asn Cys				
130	135	140	145	
tgt gga gct tct aac tac aca gac tgg gaa aac atc ccc ggc atg gcc	537			
Cys Gly Ala Ser Asn Tyr Thr Asp Trp Glu Asn Ile Pro Gly Met Ala				
150	155	160		
aag gac aga gtc ccc gat tct tgc tgc atc aac ata act gtg ggc tgt	585			
Lys Asp Arg Val Pro Asp Ser Cys Cys Ile Asn Ile Thr Val Gly Cys				
165	170	175		
ggg aat gat ttc aag gaa tcc act atc cat acc cag ggc tgc gtg gag	633			
Gly Asn Asp Phe Lys Glu Ser Thr Ile His Thr Gln Gly Cys Val Glu				
180	185	190		
act ata gca ata tgg cta agg aag aac ata ctg ctg gtg gct gca gcg	681			
Thr Ile Ala Ile Trp Leu Arg Lys Asn Ile Leu Leu Val Ala Ala Ala				
195	200	205		
gcc ctg ggc att gct ttt gtg gag gtc ttg gga att atc ttc tcc tgc	729			

Ala Leu Gly Ile Ala Phe Val Glu Val Leu Gly Ile Ile Phe Ser Cys
 210 215 220 225
 tgt ctg gtg aag agt att cga agt ggc tat gaa gta atg tag 771
 Cys Leu Val Lys Ser Ile Arg Ser Gly Tyr Glu Val Met
 230 235
 ggggtggggg cgtttgggtct ttatcatggag tggattctcc aggtttttca attaaacgga 831
 ttatitttttc agacctaaaa aaaaaaataa aaaaaaaaaa aaaaaaa 878

<210> 148

<211> 238

<212> PRT

<213> Mus musculus

<400> 148

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 Leu Leu Leu Ala Phe Cys Ala Cys Ala Val Gly Leu Ile Ala Ile Gly
 20 25 30
 Val Ala Val Gln Val Val Leu Lys Gln Ala Ile Thr His Glu Thr Thr
 35 40 45
 Ala Gly Ser Leu Leu Pro Val Val Ile Ile Ala Val Gly Ala Phe Leu
 50 55 60
 Phe Leu Val Ala Phe Val Gly Cys Cys Gly Ala Cys Lys Glu Asn Tyr
 65 70 75 80
 Cys Leu Met Ile Thr Phe Ala Ile Phe Leu Ser Leu Ile Met Leu Val
 85 90 95
 Glu Val Ala Val Ala Ile Ala Gly Tyr Val Phe Arg Asp Gln Val Lys
 100 105 110
 Ser Glu Phe Asn Lys Ser Phe Gln Gln Gln Met Gln Asn Tyr Leu Lys

115	120	125
Asp Asn Lys Thr Ala Thr Ile Leu Asp Lys Leu Gln Lys Glu Asn Asn		
130	135	140
Cys Cys Gly Ala Ser Asn Tyr Thr Asp Trp Glu Asn Ile Pro Gly Met		
145	150	155
Ala Lys Asp Arg Val Pro Asp Ser Cys Cys Ile Asn Ile Thr Val Gly		
165	170	175
Cys Gly Asn Asp Phe Lys Glu Ser Thr Ile His Thr Gln Gly Cys Val		
180	185	190
Glu Thr Ile Ala Ile Trp Leu Arg Lys Asn Ile Leu Leu Val Ala Ala		
195	200	205
Ala Ala Leu Gly Ile Ala Phe Val Glu Val Leu Gly Ile Ile Phe Ser		
210	215	220
Cys Cys Leu Val Lys Ser Ile Arg Ser Gly Tyr Glu Val Met		
225	230	235

<210> 149

<211> 1589

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (1458)

<400> 149

gaa ggc ctc att gtc cgg tca gct act aag gtc act gct gat gtc atc 48

Glu Gly Leu Ile Val Arg Ser Ala Thr Lys Val Thr Ala Asp Val Ile

1

5

10

15


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aat gca gca gag aag ctc cag gtg gtg ggc agg gct gtc aca ggc gtg   96
Asn Ala Ala Glu Lys Leu Gln Val Val Gly Arg Ala Val Thr Gly Val
      20              25              30
gac aat glg gat ctg gag cct ccc acg agg aag ggc atc cta gtc atg   144
Asp Asn Val Asp Leu Glu Pro Pro Thr Arg Lys Gly Ile Leu Val Met
      35              40              45
aac acc ccc aac ggg aac agc ctc agt gct gcg gag ctc acc tgt ggg   192
Asn Thr Pro Asn Gly Asn Ser Leu Ser Ala Ala Glu Leu Thr Cys Gly
      50              55              60
atg atc atg tgc ctg gcc agg cag att ccc cag aca aca gct tgc atg   240
Met Ile Met Cys Leu Ala Arg Gln Ile Pro Gln Thr Thr Ala Ser Met
      65              70              75              80
aaa gat ggc aaa tgg gac cgg aag aag ttc atg ggg aca gaa ctg aac   288
Lys Asp Gly Lys Trp Asp Arg Lys Lys Phe Met Gly Thr Glu Leu Asn
      85              90              95
ggg aag aca ctg gga att ctt ggc ctc ggc aga atc gga aga gag gtg   336
Gly Lys Thr Leu Gly Ile Leu Gly Leu Gly Arg Ile Gly Arg Glu Val
      100             105             110
gcc acc cga atg caa tcc ttt gga atg aag act gta ggc tat gac ccc   384
Ala Thr Arg Met Gln Ser Phe Gly Met Lys Thr Val Gly Tyr Asp Pro
      115             120             125
atc atc tct cct gaa gtc gcc gcc tcc ttt ggt gtt cag cag ctg ccg   432
Ile Ile Ser Pro Glu Val Ala Ala Ser Phe Gly Val Gln Gln Leu Pro
      130             135             140
ctg gag gag atc tgg cct ctc tgt gac ttt ata act gtc cat acc cca   480
Leu Glu Glu Ile Trp Pro Leu Cys Asp Phe Ile Thr Val His Thr Pro
      145             150             155             160
ctc ctg ccc tct acc aca ggc tta ctg aat gac agc acc ttt gct cag   528
Leu Leu Pro Ser Thr Thr Gly Leu Leu Asn Asp Ser Thr Phe Ala Gln

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165	170	175	
tgc aag aaa ggt gtg cga gtg gtg aac tgt gct cga gga ggc att gta	576		
Cys Lys Lys Gly Val Arg Val Val Asn Cys Ala Arg Gly Gly Ile Val			
180	185	190	
gat gaa ggt gcc ctg ctg cgt gcc ctg cag tct ggt cag tgt gct ggg	624		
Asp Glu Gly Ala Leu Leu Arg Ala Leu Gln Ser Gly Gln Cys Ala Gly			
195	200	205	
gct gca ctg gat gtg ttt aca gaa gag cca cca cgg gac cgg gcc tta	672		
Ala Ala Leu Asp Val Phe Thr Glu Glu Pro Pro Arg Asp Arg Ala Leu			
210	215	220	
gtg gac cac gag aat gtc atc agc tgt ccc cac ctg ggt gcc agc acc	720		
Val Asp His Glu Asn Val Ile Ser Cys Pro His Leu Gly Ala Ser Thr			
225	230	235	240
aag gaa gcc cag agc cgc tgt ggg gag gaa atc gca gtc cag ttt gtg	768		
Lys Glu Ala Gln Ser Arg Cys Gly Glu Glu Ile Ala Val Gln Phe Val			
245	250	255	
gac atg gtg aag ggg aaa tct cta aca ggc gtt gtg aac gcc cag gcc	816		
Asp Met Val Lys Gly Lys Ser Leu Thr Gly Val Val Asn Ala Gln Ala			
260	265	270	
ctc acc agt gcc ttc tct cca cac acc aag cct tgg att ggt ctg gca	864		
Leu Thr Ser Ala Phe Ser Pro His Thr Lys Pro Trp Ile Gly Leu Ala			
275	280	285	
gaa gca atg ggc acg ctg atg cac gcc tgg gct ggc tcc cct aaa ggg	912		
Glu Ala Met Gly Thr Leu Met His Ala Trp Ala Gly Ser Pro Lys Gly			
290	295	300	
acc atc cag gtg gtt aca caa gga aca tct ctg aag aat gct ggg acc	960		
Thr Ile Gln Val Val Thr Gln Gly Thr Ser Leu Lys Asn Ala Gly Thr			
305	310	315	320
tgg ctg agc cct gca gtc att gtt gcc ctt ctg aga gaa gca tct aag	1008		

Trp Leu Ser Pro Ala Val Ile Val Ala Leu Leu Arg Glu Ala Ser Lys
 325 330 335
 cag gca gac gtg aac ttg gtg aac gct aag cta ctg gtg aaa gag gct 1056
 Gln Ala Asp Val Asn Leu Val Asn Ala Lys Leu Leu Val Lys Glu Ala
 340 345 350
 ggc ctc aat gtc acc acc tcc cac aac cct ggg gtt cca ggg gag cag 1104
 Gly Leu Asn Val Thr Thr Ser His Asn Pro Gly Val Pro Gly Glu Gln
 355 360 365
 ggt agc ggg gaa tgc ctc ctg act gtg gcc cta gca ggt gcc ccc tac 1152
 Gly Ser Gly Glu Cys Leu Leu Thr Val Ala Leu Ala Gly Ala Pro Tyr
 370 375 380
 caa gcc gtg ggc ttg gtc cag ggc acc aca cca atg ctg cag atg ctc 1200
 Gln Ala Val Gly Leu Val Gln Gly Thr Thr Pro Met Leu Gln Met Leu
 385 390 395 400
 aac gga gct gtc ttc aga cca gag gtg cca cta cgc agg ggc caa ccc 1248
 Asn Gly Ala Val Phe Arg Pro Glu Val Pro Leu Arg Arg Gly Gln Pro
 405 410 415
 ctg ctc gta ttc cgg gct cag ccc tcc gac cct ggg atg ctg ccc act 1296
 Leu Leu Val Phe Arg Ala Gln Pro Ser Asp Pro Gly Met Leu Pro Thr
 420 425 430
 atg att ggc ctc ctg gca gaa gcg ggt gta cag ctg ctg tcc tac caa 1344
 Met Ile Gly Leu Leu Ala Glu Ala Gly Val Gln Leu Leu Ser Tyr Gln
 435 440 445
 acc tcc atg gtg tct gac gga gag ccc tgg cat gtc atg ggc ctg tcc 1392
 Thr Ser Met Val Ser Asp Gly Glu Pro Trp His Val Met Gly Leu Ser
 450 455 460
 tcc ctg ctg ccc agc ctg gaa aca tgg aaa cag cat gta ttg gag gct 1440
 Ser Leu Leu Pro Ser Leu Glu Thr Trp Lys Gln His Val Leu Glu Ala
 465 470 475 480

ttc cag ttc tgc ttc tga cctgggggtt cagcactctc agccccacag 1488

Phe Gln Phe Cys Phe

485

gctcttctga agaaaccga tcctgtgacc tatagggaga ggggatcgca gaaccagggc 1548

atctgcctga actaatacct agtaaagaat tcctaactcc a 1589

<210> 150

<211> 485

<212> PRT

<213> Mus musculus

<400> 150

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1 5 10 15

Asn Ala Ala Glu Lys Leu Gln Val Val Gly Arg Ala Val Thr Gly Val

20 25 30

Asp Asn Val Asp Leu Glu Pro Pro Thr Arg Lys Gly Ile Leu Val Met

35 40 45

Asn Thr Pro Asn Gly Asn Ser Leu Ser Ala Ala Glu Leu Thr Cys Gly

50 55 60

Met Ile Met Cys Leu Ala Arg Gln Ile Pro Gln Thr Thr Ala Ser Met

65 70 75 80

Lys Asp Gly Lys Trp Asp Arg Lys Lys Phe Met Gly Thr Glu Leu Asn

85 90 95

Gly Lys Thr Leu Gly Ile Leu Gly Leu Gly Arg Ile Gly Arg Glu Val

100 105 110

Ala Thr Arg Met Gln Ser Phe Gly Met Lys Thr Val Gly Tyr Asp Pro

115 120 125

Ile Ile Ser Pro Glu Val Ala Ala Ser Phe Gly Val Gln Gln Leu Pro

130	135	140
Leu Glu Glu Ile Trp Pro Leu Cys Asp Phe Ile Thr Val His Thr Pro		
145	150	155
Leu Leu Pro Ser Thr Thr Gly Leu Leu Asn Asp Ser Thr Phe Ala Gln		160
	165	170
		175
Cys Lys Lys Gly Val Arg Val Val Asn Cys Ala Arg Gly Gly Ile Val		
180	185	190
Asp Glu Gly Ala Leu Leu Arg Ala Leu Gln Ser Gly Gln Cys Ala Gly		
195	200	205
Ala Ala Leu Asp Val Phe Thr Glu Glu Pro Pro Arg Asp Arg Ala Leu		
210	215	220
Val Asp His Glu Asn Val Ile Ser Cys Pro His Leu Gly Ala Ser Thr		
225	230	235
Lys Glu Ala Gln Ser Arg Cys Gly Glu Glu Ile Ala Val Gln Phe Val		240
	245	250
		255
Asp Met Val Lys Gly Lys Ser Leu Thr Gly Val Val Asn Ala Gln Ala		
260	265	270
Leu Thr Ser Ala Phe Ser Pro His Thr Lys Pro Trp Ile Gly Leu Ala		
275	280	285
Glu Ala Met Gly Thr Leu Met His Ala Trp Ala Gly Ser Pro Lys Gly		
290	295	300
Thr Ile Gln Val Val Thr Gln Gly Thr Ser Leu Lys Asn Ala Gly Thr		
305	310	315
Trp Leu Ser Pro Ala Val Ile Val Ala Leu Leu Arg Glu Ala Ser Lys		320
	325	330
		335
Gln Ala Asp Val Asn Leu Val Asn Ala Lys Leu Leu Val Lys Glu Ala		
340	345	350
Gly Leu Asn Val Thr Thr Ser His Asn Pro Gly Val Pro Gly Glu Gln		
355	360	365

Gly Ser Gly Glu Cys Leu Leu Thr Val Ala Leu Ala Gly Ala Pro Tyr
 370 375 380
 Gln Ala Val Gly Leu Val Gln Gly Thr Thr Pro Met Leu Gln Met Leu
 385 390 395 400
 Asn Gly Ala Val Phe Arg Pro Glu Val Pro Leu Arg Arg Gly Gln Pro
 405 410 415
 Leu Leu Val Phe Arg Ala Gln Pro Ser Asp Pro Gly Met Leu Pro Thr
 420 425 430
 Met Ile Gly Leu Leu Ala Glu Ala Gly Val Gln Leu Leu Ser Tyr Gln
 435 440 445
 Thr Ser Met Val Ser Asp Gly Glu Pro Trp His Val Met Gly Leu Ser
 450 455 460
 Ser Leu Leu Pro Ser Leu Glu Thr Trp Lys Gln His Val Leu Glu Ala
 465 470 475 480
 Phe Gln Phe Cys Phe
 485

<210> 151

<211> 535

<212> DNA

<213> Mus musculus

<400> 151

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 acggccacca cgggcaagcc acacgtggct tactttgtac ccatgtccaa gatcgctgac 180
 tttttgaagg caggggtgtga ggtaaccatc ctgtttgcag acctccatgc atacctggac 240
 aacatgaaag ccccctggga gcttctagaa cttcgaacca gttactatga gaatgtgac 300
 aaggccatgc tggagagtat tggcgtgccc ttggagaagc tcaagtttat caaaggcacc 360

gactaccagc tcagcaaaga gtacacactg gatgigtacc gactgtcctc tgtggtcaca 420
 caacacgacg ccaagaaagc gggggctgag gttgtgaagc aggtggaaca cctttgctga 480
 gtggtctgct gtacccggtc tgcaggcttt. ggatgaagag tactttaaag tagac 535

<210> 152

<211> 2434

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (1308)

<400> 152

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Lys Asp Glu Glu Phe Val Lys Lys Ala Leu Glu Thr Met Asn Lys Tyr	
1 5 10 15	
gac ctt agt gga agg cct ttg aat att aaa gag gat ccg gat gga gaa	96
Asp Leu Ser Gly Arg Pro Leu Asn Ile Lys Glu Asp Pro Asp Gly Glu	
20 25 30	
aat gct cgc cgg gca ctg cag cga aca gga aca tca ttt caa gga tca	144
Asn Ala Arg Arg Ala Leu Gln Arg Thr Gly Thr Ser Phe Gln Gly Ser	
35 40 45	
cat gcc tcc gat gtg gga tct ggg ttg gtg aat tta cca cct tcc att	192
His Ala Ser Asp Val Gly Ser Gly Leu Val Asn Leu Pro Pro Ser Ile	
50 55 60	
ctc aat aat cca aac att cct cct gag gtt atc agc aat ttg cag gct	240
Leu Asn Asn Pro Asn Ile Pro Pro Glu Val Ile Ser Asn Leu Gln Ala	
65 70 75 80	

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ggt aga ctt ggt tcc aca att ttt gtt gct aat ctt gac ttc aaa gtt 288
Gly Arg Leu Gly Ser Thr Ile Phe Val Ala Asn Leu Asp Phe Lys Val
      85              90              95
ggt tgg aag aaa tta aag gaa gtg ttc agc ata gct gga act gtg aag 336
Gly Trp Lys Lys Leu Lys Glu Val Phe Ser Ile Ala Gly Thr Val Lys
      100             105             110
cga gct gat att aaa gaa gac aag gat ggc aag agc aga ggc atg ggc 384
Arg Ala Asp Ile Lys Glu Asp Lys Asp Gly Lys Ser Arg Gly Met Gly
      115             120             125
act gtc act ttt gag cag gca att gaa gca gtc caa gca att tcc atg 432
Thr Val Thr Phe Glu Gln Ala Ile Glu Ala Val Gln Ala Ile Ser Met
      130             135             140
ttc aat ggg cag ttt tta ttt gat aga cct atg cat gtg aaa atg gat 480
Phe Asn Gly Gln Phe Leu Phe Asp Arg Pro Met His Val Lys Met Asp
      145             150             155             160
gac aaa tct gtc cct cat gaa gac tac cgt tca cat gat agt aag aca 528
Asp Lys Ser Val Pro His Glu Asp Tyr Arg Ser His Asp Ser Lys Thr
      165             170             175
tca cag tta cca cgt ggt ctt gga ggc att gga atg gga ctt ggt cca 576
Ser Gln Leu Pro Arg Gly Leu Gly Gly Ile Gly Met Gly Leu Gly Pro
      180             185             190
ggt gga cag cct att agt gcc agc cag cgt aac ata act ggt gta atg 624
Gly Gly Gln Pro Ile Ser Ala Ser Gln Arg Asn Ile Thr Gly Val Met
      195             200             205
gga aat ttg ggt cca agt gga gtt ggg ttt ggt ggt ctg gaa gca atg 672
Gly Asn Leu Gly Pro Ser Gly Val Gly Phe Gly Gly Leu Glu Ala Met
      210             215             220
aat agc atg gca ggc ttt ggt gga gtt ggc cga atg gga gag cta tac 720
Asn Ser Met Ala Gly Phe Gly Gly Val Gly Arg Met Gly Glu Leu Tyr

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225	230	235	240	
cgt ggt gca atg act agt agc atg gag cga gat ttc gga cgt ggt gat	768			
Arg Gly Ala Met Thr Ser Ser Met Glu Arg Asp Phe Gly Arg Gly Asp				
	245	250	255	
att gga tta agt cga ggc ttt ggc gat tcc ttt ggt aga ctt ggc agt	816			
Ile Gly Leu Ser Arg Gly Phe Gly Asp Ser Phe Gly Arg Leu Gly Ser				
	260	265	270	
gca atg att gga ggg ttt gca gga aga ata gga gct tct aac atg ggt	864			
Ala Met Ile Gly Gly Phe Ala Gly Arg Ile Gly Ala Ser Asn Met Gly				
	275	280	285	
cca gta gga act gga ata agc ggc agc atg agc ggc atg agc act gtg	912			
Pro Val Gly Thr Gly Ile Ser Gly Ser Met Ser Gly Met Ser Thr Val				
	290	295	300	
act gga ggc atg ggc atg gga ctg gac cgc atg agc tcc agc ttc gac	960			
Thr Gly Gly Met Gly Met Gly Leu Asp Arg Met Ser Ser Ser Phe Asp				
305	310	315	320	
agg atg ggg cca ggc att gga gcc ata ctg gaa agg agc atc gat gta	1008			
Arg Met Gly Pro Gly Ile Gly Ala Ile Leu Glu Arg Ser Ile Asp Val				
	325	330	335	
gac cga ggg ttt tta tca ggt ccc atg gga agc gga atg aga gac aga	1056			
Asp Arg Gly Phe Leu Ser Gly Pro Met Gly Ser Gly Met Arg Asp Arg				
	340	345	350	
tta ggc tcc aaa ggc aac cag ata ttt gtt aga aat ctt cct ttt gac	1104			
Leu Gly Ser Lys Gly Asn Gln Ile Phe Val Arg Asn Leu Pro Phe Asp				
	355	360	365	
ttg act tgg cag aaa tta aaa gag aaa ttc agc caa ttg ggt cat gta	1152			
Leu Thr Trp Gln Lys Leu Lys Glu Lys Phe Ser Gln Leu Gly His Val				
	370	375	380	
atg ttt gca gag ata aag atg gag aat ggc aag tca aaa ggc tgt ggg	1200			

Met Phe Ala Glu Ile Lys Met Glu Asn Gly Lys Ser Lys Gly Cys Gly
 385 390 395 400
 aca gtc agg ttt gaa tct gca gag tca gcg gaa aag gcc tgc agg atc 1248
 Thr Val Arg Phe Glu Ser Ala Glu Ser Ala Glu Lys Ala Cys Arg Ile
 405 410 415
 atg aat ggc atc aag atc agc ggc agg gaa atc gat gtg cgc ttg gac 1296
 Met Asn Gly Ile Lys Ile Ser Gly Arg Glu Ile Asp Val Arg Leu Asp
 420 425 430
 cgc aat gcg taa ttcaagcat ggttggaaacc tttcctcattc tgtttatgac 1348
 Arg Asn Ala
 435
 tctcctagta aaagtcattt ttagtaatgt tglatgctta caaatgcigt aaaaatgaac 1408
 ttttacaact cccaccagct attaacagga tagtgtggaa aatgtactgt gagttttttg 1468
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 gacatgaatt ttcttctttt tgccctctta ccattccatc ttccacata acactattaa 1888
 aaaatatcaa actccacaac ccttattctt attatttcca ataattccaa ttcatatag 1948
 aactgataaa gtagcaagtc ctaagtataa cactaggcag accaccccca actttcggtc 2008
 tagtttccag ccattaaaaat gaactgctaa gaacagaaat aaaattgaaa tgttgagaga 2068
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 gatgttagat atagccatgt ctcccttacc tgcagaagaa tagcatgttg ttaaaatgtg 2248
 cacatcaata ctatatttta ttaataatct tcataagaaa aacactggat actttttgtt 2308
 ggtagtttt agaaaacigt tattgtttaga gcaagagtct tattgaattt gtatttcctt 2368
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tttacc

2434

<210> 153

<211> 435

<212> PRT

<213> Mus musculus

<400> 153

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 Asp Leu Ser Gly Arg Pro Leu Asn Ile Lys Glu Asp Pro Asp Gly Glu
 20 25 30
 Asn Ala Arg Arg Ala Leu Gln Arg Thr Gly Thr Ser Phe Gln Gly Ser
 35 40 45
 His Ala Ser Asp Val Gly Ser Gly Leu Val Asn Leu Pro Pro Ser Ile
 50 55 60
 Leu Asn Asn Pro Asn Ile Pro Pro Glu Val Ile Ser Asn Leu Gln Ala
 65 70 75 80
 Gly Arg Leu Gly Ser Thr Ile Phe Val Ala Asn Leu Asp Phe Lys Val
 85 90 95
 Gly Trp Lys Lys Leu Lys Glu Val Phe Ser Ile Ala Gly Thr Val Lys
 100 105 110
 Arg Ala Asp Ile Lys Glu Asp Lys Asp Gly Lys Ser Arg Gly Met Gly
 115 120 125
 Thr Val Thr Phe Glu Gln Ala Ile Glu Ala Val Gln Ala Ile Ser Met
 130 135 140
 Phe Asn Gly Gln Phe Leu Phe Asp Arg Pro Met His Val Lys Met Asp
 145 150 155 160
 Asp Lys Ser Val Pro His Glu Asp Tyr Arg Ser His Asp Ser Lys Thr

165	170	175
Ser Gln Leu Pro Arg Gly Leu Gly Gly Ile Gly Met Gly Leu Gly Pro		
180	185	190
Gly Gly Gln Pro Ile Ser Ala Ser Gln Arg Asn Ile Thr Gly Val Met		
195	200	205
Gly Asn Leu Gly Pro Ser Gly Val Gly Phe Gly Gly Leu Glu Ala Met		
210	215	220
Asn Ser Met Ala Gly Phe Gly Gly Val Gly Arg Met Gly Glu Leu Tyr		
225	230	235
Arg Gly Ala Met Thr Ser Ser Met Glu Arg Asp Phe Gly Arg Gly Asp		
245	250	255
Ile Gly Leu Ser Arg Gly Phe Gly Asp Ser Phe Gly Arg Leu Gly Ser		
260	265	270
Ala Met Ile Gly Gly Phe Ala Gly Arg Ile Gly Ala Ser Asn Met Gly		
275	280	285
Pro Val Gly Thr Gly Ile Ser Gly Ser Met Ser Gly Met Ser Thr Val		
290	295	300
Thr Gly Gly Met Gly Met Gly Leu Asp Arg Met Ser Ser Ser Phe Asp		
305	310	315
Arg Met Gly Pro Gly Ile Gly Ala Ile Leu Glu Arg Ser Ile Asp Val		
325	330	335
Asp Arg Gly Phe Leu Ser Gly Pro Met Gly Ser Gly Met Arg Asp Arg		
340	345	350
Leu Gly Ser Lys Gly Asn Gln Ile Phe Val Arg Asn Leu Pro Phe Asp		
355	360	365
Leu Thr Trp Gln Lys Leu Lys Glu Lys Phe Ser Gln Leu Gly His Val		
370	375	380
Met Phe Ala Glu Ile Lys Met Glu Asn Gly Lys Ser Lys Gly Cys Gly		
385	390	395
		400

Thr Val Arg Phe Glu Ser Ala Glu Ser Ala Glu Lys Ala Cys Arg Ile

405

410

415

Met Asn Gly Ile Lys Ile Ser Gly Arg Glu Ile Asp Val Arg Leu Asp

420

425

430

Arg Asn Ala

435

<210> 154

<211> 566

<212> DNA

<213> Mus musculus

<400> 154

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 cagccgagtt agtcccaagt cgtcggactc catttgctat tcttttcttt ctctcccaca 180
 cccgtgtggt agtgggcgtt cgtctttgcg tctcttttca ttcattctcca gacctttaga 240
 ggttttttta gggttgggga tagtggggag ggcaggcgag gggaaaggag gaggacatgg 300
 agatgaagaa gaagattaac atggagtiga agaacagagc cccggaggag gtgacagagt 360
 tagtcctcga taattgcttg tgtgtcaatg gggaaatcga aggcctgaat gacaccttta 420
 aggaactgga gtttcttagc atggccaacg tggagttagg ttccttggcc cggcttccca 480
 gcttgaataa actccggaag ttggaactta gtgacaatat aatttctgga ggcttgggaag 540
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<210> 155

<211> 1044

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (138).. (749)

<400> 155

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aaaggagctg cgactaccgc ccagaggccg ccgagccagc gacgcctgag ctagtcgaga 120
ccgtcgcgcg cgcccc atg gcg gcc gcc aag gac agt cac gag gac cat 170
      Met Ala Ala Ala Lys Asp Ser His Glu Asp His
              1              5              10
gat act tcc aca gag aat gca gat gag tcc aac cac gac ccc cag ttc 218
Asp Thr Ser Thr Glu Asn Ala Asp Glu Ser Asn His Asp Pro Gln Phe
              15              20              25
gag cca ata gtt tct ctt ccc gag caa gaa att aaa acg ctg gag gaa 266
Glu Pro Ile Val Ser Leu Pro Glu Gln Glu Ile Lys Thr Leu Glu Glu
              30              35              40
gat gaa gag gaa ctt ttt aag atg cgt gca aag ctg ttc cgg ttt gct 314
Asp Glu Glu Glu Leu Phe Lys Met Arg Ala Lys Leu Phe Arg Phe Ala
              45              50              55
tca gag aat gac ctc cca gaa tgg aag gag cga ggc act gga gat gtc 362
Ser Glu Asn Asp Leu Pro Glu Trp Lys Glu Arg Gly Thr Gly Asp Val
              60              65              70              75
aag ctt ctg aag cac aag gag aaa ggg acc atc cgc ctt ctt atg agg 410
Lys Leu Leu Lys His Lys Glu Lys Gly Thr Ile Arg Leu Leu Met Arg
              80              85              90
agg gac aaa acc ttg aag ata tgc gcc aac cac tat att aca cca atg 458
Arg Asp Lys Thr Leu Lys Ile Cys Ala Asn His Tyr Ile Thr Pro Met
              95              100              105
atg gag ctg aag ccg aat gct ggc agt gac cga gcc tgg gtc tgg aat 506

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Met Glu Leu Lys Pro Asn Ala Gly Ser Asp Arg Ala Trp Val Trp Asn
 110 115 120
 acc cac acc gac ttt gct gac gag tgc ccc aag cct gag ctg ctc gcc 554
 Thr His Thr Asp Phe Ala Asp Glu Cys Pro Lys Pro Glu Leu Leu Ala
 125 130 135
 atc cgc ttc cta aat gct gag aat gca caa aag ttc aaa aca aag ttt 602
 Ile Arg Phe Leu Asn Ala Glu Asn Ala Gln Lys Phe Lys Thr Lys Phe
 140 145 150 155
 gaa gaa tgc agg aaa gaa att gaa gag aga gaa aag aaa gga cca ggc 650
 Glu Glu Cys Arg Lys Glu Ile Glu Glu Arg Glu Lys Lys Gly Pro Gly
 160 165 170
 aaa aat gat aat gcc gaa aag gtg gcc gag aag ctg gaa gcc ctt tca 698
 Lys Asn Asp Asn Ala Glu Lys Val Ala Glu Lys Leu Glu Ala Leu Ser
 175 180 185
 gtg agg gag gcc aga gag gag gct gaa gag aag tct gag gag aaa caa 746
 Val Arg Glu Ala Arg Glu Glu Ala Glu Glu Lys Ser Glu Glu Lys Gln
 190 195 200
 tga atcactctgt ctttttcctt tccttttctt tttaaaaatt tgccttacc 799
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 aaaaa 1044

<210> 156

<211> 203

<212> PRT

<213> Mus musculus

<400> 156

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 20 25 30
 Leu Pro Glu Gln Glu Ile Lys Thr Leu Glu Glu Asp Glu Glu Glu Leu
 35 40 45
 Phe Lys Met Arg Ala Lys Leu Phe Arg Phe Ala Ser Glu Asn Asp Leu
 50 55 60
 Pro Glu Trp Lys Glu Arg Gly Thr Gly Asp Val Lys Leu Leu Lys His
 65 70 75 80
 Lys Glu Lys Gly Thr Ile Arg Leu Leu Met Arg Arg Asp Lys Thr Leu
 85 90 95
 Lys Ile Cys Ala Asn His Tyr Ile Thr Pro Met Met Glu Leu Lys Pro
 100 105 110
 Asn Ala Gly Ser Asp Arg Ala Trp Val Trp Asn Thr His Thr Asp Phe
 115 120 125
 Ala Asp Glu Cys Pro Lys Pro Glu Leu Leu Ala Ile Arg Phe Leu Asn
 130 135 140
 Ala Glu Asn Ala Gln Lys Phe Lys Thr Lys Phe Glu Glu Cys Arg Lys
 145 150 155 160
 Glu Ile Glu Glu Arg Glu Lys Lys Gly Pro Gly Lys Asn Asp Asn Ala
 165 170 175
 Glu Lys Val Ala Glu Lys Leu Glu Ala Leu Ser Val Arg Glu Ala Arg
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 Glu Glu Ala Glu Glu Lys Ser Glu Glu Lys Gln
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<210> 157

<211> 1091

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (66).. (1010)

<400> 157

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    Met Phe Gln Pro Ala Gly His Gly Gln Asp Trp Ala Met Glu Gly
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ccg cgg gat ggc ctc aag aag gag cgc ttg gtg gac gat cgc cac gac 158
Pro Arg Asp Gly Leu Lys Lys Glu Arg Leu Val Asp Asp Arg His Asp
        20             25             30
agc ggc ctg gac tcc atg aag gac gag gag tac gag caa atg gtg aag 206
Ser Gly Leu Asp Ser Met Lys Asp Glu Glu Tyr Glu Gln Met Val Lys
        35             40             45
gag ctg cgg gag atc cgc ctg cag ccg cag gag gcg ccg ctg gcc gcc 254
Glu Leu Arg Glu Ile Arg Leu Gln Pro Gln Glu Ala Pro Leu Ala Ala
        50             55             60
gag ccc tgg aag cag cag ctc acg gag gac gga gac tcg ttc ctg cac 302
Glu Pro Trp Lys Gln Gln Leu Thr Glu Asp Gly Asp Ser Phe Leu His
        65             70             75
ttg gca atc atc cac gaa gag aag ccg ctg acc atg gaa gtc att ggt 350
Leu Ala Ile Ile His Glu Glu Lys Pro Leu Thr Met Glu Val Ile Gly
        80             85             90             95
cag gtg aag gga gac ctg gcc ttc ctc aac ttc cag aac aac ctg cag 398

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Gln Val Lys Gly Asp Leu Ala Phe Leu Asn Phe Gln Asn Asn Leu Gln
 100 105 110
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 Gln Thr Pro Leu His Leu Ala Val Ile Thr Asn Gln Pro Gly Ile Ala
 115 120 125
 gag gca ctt ctg aaa gct ggc tgt gat cct gag ctc cga gac ttt cga 494
 Glu Ala Leu Leu Lys Ala Gly Cys Asp Pro Glu Leu Arg Asp Phe Arg
 130 135 140
 gga aat acc cct cta cat ctt gcc tgt gag cag ggc tgc ctg gcc agt 542
 Gly Asn Thr Pro Leu His Leu Ala Cys Glu Gln Gly Cys Leu Ala Ser
 145 150 155
 gta gca gtc ttg acg cag acc tgc aca ccc cag cat ctc cac tcc gtc 590
 Val Ala Val Leu Thr Gln Thr Cys Thr Pro Gln His Leu His Ser Val
 160 165 170 175
 ctg cag gcc acc aac tac aat ggc cac acg tgt ctg cac cta gcc tct 638
 Leu Gln Ala Thr Asn Tyr Asn Gly His Thr Cys Leu His Leu Ala Ser
 180 185 190
 act cac ggc tac ctg gcc atc gtg gag cac ttg gtg act ttg ggt gct 686
 Thr His Gly Tyr Leu Ala Ile Val Glu His Leu Val Thr Leu Gly Ala
 195 200 205
 gat gtc aac gct cag gag ccc tgc aat ggc cgg aca gcc ctc cac ctt 734
 Asp Val Asn Ala Gln Glu Pro Cys Asn Gly Arg Thr Ala Leu His Leu
 210 215 220
 gcg gtg gac ctg cag aat cct gac ctg gtt tcg ctc ttg ttg aaa tgt 782
 Ala Val Asp Leu Gln Asn Pro Asp Leu Val Ser Leu Leu Leu Lys Cys
 225 230 235
 ggg gct gat gtc aac agg gta acc tac caa ggc tac tcc ccc tac cag 830
 Gly Ala Asp Val Asn Arg Val Thr Tyr Gln Gly Tyr Ser Pro Tyr Gln
 240 245 250 255

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ctt acc tgg ggc cgc cca agt acc cgg ata cag cag cag ctg ggc cag      878
Leu Thr Trp Gly Arg Pro Ser Thr Arg Ile Gln Gln Gln Leu Gly Gln
                260                265                270

ctg acc ctg gaa aat ctc cag atg cta ccc gag agc gag gat gag gag      926
Leu Thr Leu Glu Asn Leu Gln Met Leu Pro Glu Ser Glu Asp Glu Glu
                275                280                285

agc tat gac acg gag tca gaa ttc aca gag gat gag ctg ccc tat gat      974
Ser Tyr Asp Thr Glu Ser Glu Phe Thr Glu Asp Glu Leu Pro Tyr Asp
                290                295                300

gac tgt gtg ttt gga ggc cag cgt ctg aca tta taa gtggaaagtg      1020
Asp Cys Val Phe Gly Gly Gln Arg Leu Thr Leu
    305                310                315

gcaaaaaaga atgtggactt gtatatattgt acaaataagag ttttattttt ctaaaaaaaaa 1080
aaaaaaaaaaa a                                                    1091

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<210> 158

<211> 314

<212> PRT

<213> Mus musculus

<400> 158

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Met Phe Gln Pro Ala Gly His Gly Gln Asp Trp Ala Met Glu Gly Pro
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Arg Asp Gly Leu Lys Lys Glu Arg Leu Val Asp Asp Arg His Asp Ser
                20                25                30

Gly Leu Asp Ser Met Lys Asp Glu Glu Tyr Glu Gln Met Val Lys Glu
                35                40                45

Leu Arg Glu Ile Arg Leu Gln Pro Gln Glu Ala Pro Leu Ala Ala Glu
                50                55                60

```

Pro Trp Lys Gln Gln Leu Thr Glu Asp Gly Asp Ser Phe Leu His Leu
 65 70 75 80
 Ala Ile Ile His Glu Glu Lys Pro Leu Thr Met Glu Val Ile Gly Gln
 85 90 95
 Val Lys Gly Asp Leu Ala Phe Leu Asn Phe Gln Asn Asn Leu Gln Gln
 100 105 110
 Thr Pro Leu His Leu Ala Val Ile Thr Asn Gln Pro Gly Ile Ala Glu
 115 120 125
 Ala Leu Leu Lys Ala Gly Cys Asp Pro Glu Leu Arg Asp Phe Arg Gly
 130 135 140
 Asn Thr Pro Leu His Leu Ala Cys Glu Gln Gly Cys Leu Ala Ser Val
 145 150 155 160
 Ala Val Leu Thr Gln Thr Cys Thr Pro Gln His Leu His Ser Val Leu
 165 170 175
 Gln Ala Thr Asn Tyr Asn Gly His Thr Cys Leu His Leu Ala Ser Thr
 180 185 190
 His Gly Tyr Leu Ala Ile Val Glu His Leu Val Thr Leu Gly Ala Asp
 195 200 205
 Val Asn Ala Gln Glu Pro Cys Asn Gly Arg Thr Ala Leu His Leu Ala
 210 215 220
 Val Asp Leu Gln Asn Pro Asp Leu Val Ser Leu Leu Leu Lys Cys Gly
 225 230 235 240
 Ala Asp Val Asn Arg Val Thr Tyr Gln Gly Tyr Ser Pro Tyr Gln Leu
 245 250 255
 Thr Trp Gly Arg Pro Ser Thr Arg Ile Gln Gln Gln Leu Gly Gln Leu
 260 265 270
 Thr Leu Glu Asn Leu Gln Met Leu Pro Glu Ser Glu Asp Glu Glu Ser
 275 280 285
 Tyr Asp Thr Glu Ser Glu Phe Thr Glu Asp Glu Leu Pro Tyr Asp Asp

290 295 300
 Cys Val Phe Gly Gly Gln Arg Leu Thr Leu
 305 310

<210> 159

<211> 888

<212> DNA

<213> Mus musculus

<400> 159

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ccacactaac catcatgaga tatctgccaa gagaggtgga tccattgggt tataacatgt 120
ctcacgagga tcctggaaat gtatcttatt ctgagattgg aggcctgtca gaacagattc 180
gggagttaag agaggtaata gaattgcctc ttacaaatcc agaattattc cagcgtgtag 240
gaataatacc tccaaaaggc tgtttgctct atggaccgcc agcactggga aaacactctt 300
ggcagagct gtggccagcc agctggactg caacttccta aaggttgtat ctatttctat 360
tgtagacaag tacattgggt aaagtgcctg ttgattaga gaaatgttta attatgccag 420
ggaccaccag ccatgcatcatttttatgga tgaaatagat gctattgggt gccgtcggtt 480
ttctgaggga acatcagctg acagagagat tcagagaact ttaatggagt tactagnaca 540
gatggatgga ttgatactc tgcatagagt taaatgatca tggctacaac agaccagatc 600
actggatcct gcttgctcgc caggaagata gatgaaaatc atacgattcc caatgacagc 660
agttggttat gaaatcagcg gcctatcaac catgtgaatg attgacaatg tacttagatc 720
gttttgcgcc tggaagtttc ttccagggtg caatgccgcc agttttgtct gggtttgaac 780
ctcgaaggtc ccggagggcg ccgggacgcg ttaaagggtg gcgaattgaa aatggaagtt 840
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<210> 160

<211> 1276

<212> DNA

<213> *Mus musculus*

<400> 160

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gaaccgagcc tgggtccgcg cagtcagctc agccccctgt ggcggtccc tcccggctctc 60
tcctcctacg agcagcatga aagccttcag gtccggigag tccgttagga aaaacagcct 120
gtcggaccac agcttgggca tctcccggag caaaacccccg gtggacgacc cgatgagctt 180
gctctacaac atgaacgact gctactccaa gctcaaggaa ctggigccca gcatcccca 240
gaacaagaag gtgaccaaga tggaaatcct gcagcacgtc atcgattaca tcttgacct 300
gcagatgcc ctggactcgc atcccactat cgtcagcctg catcaccaga gacctggaca 360
gaaccaggcg tccaggacgc gcctgaccac cctgaacacg gacatcagca tctgtcctt 420
gcaggcatct gaattccctt ctgagcttat gtgaatgat agcaaagtac tctgtggcta 480
aataaatggc atttggggac ttttctttt ctttttactt tctcttttc ttttgcaaa 540
gaagaagtct acaagatctt ttaagacttt tgttatcagc catttcacca ggagaacacg 600
ttgaatggac ctttttaaaa agaaagcgga aggaaaacta aggatgatcg tcttgcccag 660
gtgtcgttct ccggccttga ctgtgatacc gttatttatg agagactttc agtgccttt 720
ctacagttgg aaggttttct ttatatata tttccaccat ggggagcgaa aaggttaaaa 780
aaaagaaaaa aatcacaagg aattgcccc aigtgacaga ctttgccitt tcacaaaggt 840
ggagcgtgaa ttccagaagg acccagttat cggttactta aatgaagtct tcggtcagaa 900
atggcctttt tgacacgagc ctactgaatg ctgtgtatat atttatatat aaatatatat 960
atattgagtg aaccttgtgg actctttaat tagagttttc ttgtatagtg gcagaaataa 1020
cctatttctg cattaaaatg taatgacgta cttatgctaa actttttata aaagtttagt 1080
tgtaaaacta acccttttat acaaaataaa tcaagtgtgt ttattgaatg ttgattgctt 1140
gctttatttc agacaaccag tgctttgatt ttttttatgc tatgttataa ctgaacccaa 1200
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1276

<210> 161

<211> 2934

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (566).. (2011)

<400> 161

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tccaggatga tcgatcgcggt ctaccggcct ccagtactgc ctagaagctg aagaggaggt 120
ggagtgcctg aggagacaac tgcaccgggt tcaccgcgcg gtgagcgaga ctctgggagt 180
gaagcgagac ggaggagaga cacacgtgtt acctgcttta ttctgggact gtttgggtct 240
gtgtcccccc ggggcagctc tccgcccgcg cgccgcgctg cgtggaaggc ctccacagaa 300
cgcaccaccg gctcagccgc ccccgctcgc cgccctcagc ccagcttcac agccgagctc 360
gcccggggcc gcaggaagct cttttgctac atgccttgcc agcgcgggag cctgcggctc 420
aactgcgctg ctgccggagc gctcagtgcc gcctccgctg cccgctcccc ccgcgccccca 480
ctccgaaccc gctggctcgc cgccgcgctg ctgccccctt cccgtgccgc cgccgcccgc 540
gccgcccgcc cccgacgcct ggggtg atg ctg gac atg gga gat agg aaa gag 592

```

Met Leu Asp Met Gly Asp Arg Lys Glu

1

5

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gtg aaa atg att ccc aag tcc tgc ttc agc atc aac agc ctg gtc ccc 640

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Val Lys Met Ile Pro Lys Ser Ser Phe Ser Ile Asn Ser Leu Val Pro

10

15

20

25

```

gag gcc gtc cag aac gac aac cac cac gcg agc cac ggc cac cac aac 688

```

Glu Ala Val Gln Asn Asp Asn His His Ala Ser His Gly His His Asn

30

35

40

```

agc cac cac ccc cag cat cac cat cat cat cac cac cac cac cac ccg 736

```

Ser His His Pro Gln His His His His His His His His His His Pro

45

50

55

```

ccg ccg ccc gcg ccc cag ccg cct cca ccg ccg ccc cag cag cag cag 784

```

Pro Pro Pro Ala Pro Gln Pro Pro Pro Pro Pro Pro Gln Gln Gln Gln
 60 65 70
 cag cag ccg ccc ccc gcc ccg cag ccc ccg cag gcg cgc ggc gcc cca 832
 Gln Gln Pro Pro Pro Ala Pro Gln Pro Pro Gln Ala Arg Gly Ala Pro
 75 80 85
 gca gcc gac gac gac aag ggt ccc cag ccg ctc ctg ctc ccg ccc tcc 880
 Ala Ala Asp Asp Asp Lys Gly Pro Gln Pro Leu Leu Leu Pro Pro Ser
 90 95 100 105
 acc gcc ctg gac ggg gcc aag gct gac gca ctt gga gcc aaa ggc gag 928
 Thr Ala Leu Asp Gly Ala Lys Ala Asp Ala Leu Gly Ala Lys Gly Glu
 110 115 120
 ccg ggc ggc ggc ccg gcg gag ctg gcg ccc gtc ggg ccg gac gag aag 976
 Pro Gly Gly Gly Pro Ala Glu Leu Ala Pro Val Gly Pro Asp Glu Lys
 125 130 135
 gag aag ggc gcg ggc gcc ggg ggg gag gag aag aaa ggg gcg ggc gag 1024
 Glu Lys Gly Ala Gly Ala Gly Gly Glu Glu Lys Lys Gly Ala Gly Glu
 140 145 150
 ggc ggc aag gac ggg gag ggg ggc aag gag ggc gac aag aag aac ggc 1072
 Gly Gly Lys Asp Gly Glu Gly Gly Lys Glu Gly Asp Lys Lys Asn Gly
 155 160 165
 aag tac gag aag ccg ccg ttc agc tac aac gcg ctc atc atg atg gcc 1120
 Lys Tyr Glu Lys Pro Pro Phe Ser Tyr Asn Ala Leu Ile Met Met Ala
 170 175 180 185
 atc agg cag agt ccc gag aag cgc ctg acg ctc aat ggc atc tat gag 1168
 Ile Arg Gln Ser Pro Glu Lys Arg Leu Thr Leu Asn Gly Ile Tyr Glu
 190 195 200
 ttc atc atg aag aac ttc ccc tac tac cgc gag aac aag cag ggc tgg 1216
 Phe Ile Met Lys Asn Phe Pro Tyr Tyr Arg Glu Asn Lys Gln Gly Trp
 205 210 215

cag aac tcc atc cgc cac aac ctg tcc ctc aac aag tgc ttc gtg aag 1264
 Gln Asn Ser Ile Arg His Asn Leu Ser Leu Asn Lys Cys Phe Val Lys
 220 225 230
 gta ccg cgc cac tac gac gac ccg ggc aag ggc aac tac tgg atg ctc 1312
 Val Pro Arg His Tyr Asp Asp Pro Gly Lys Gly Asn Tyr Trp Met Leu
 235 240 245
 gac ccg tcg agc gac gac gtg ttc atc ggc ggc acg acc ggc aag ctg 1360
 Asp Pro Ser Ser Asp Asp Val Phe Ile Gly Gly Thr Thr Gly Lys Leu
 250 255 260 265
 cgg cgc cgc tcc acc acg tct cgg gcc aag ctg gcc ttt aag cgc ggg 1408
 Arg Arg Arg Ser Thr Thr Ser Arg Ala Lys Leu Ala Phe Lys Arg Gly
 270 275 280
 gcg cgc ctc acc tcc acc ggc ctc acc ttc atg gac cgc gcc ggc tcc 1456
 Ala Arg Leu Thr Ser Thr Gly Leu Thr Phe Met Asp Arg Ala Gly Ser
 285 290 295
 ctc tac tgg ccc atg tcg ccc ttc ctg tcc ctg cac cac ccc cgc gcc 1504
 Leu Tyr Trp Pro Met Ser Pro Phe Leu Ser Leu His His Pro Arg Ala
 300 305 310
 agc agc act ttg agt tac aac ggg acc acg tcg gcc tac ccc agc cac 1552
 Ser Ser Thr Leu Ser Tyr Asn Gly Thr Thr Ser Ala Tyr Pro Ser His
 315 320 325
 ccc atg ccc tac agc tcc gtg ttg act caa aac tcg ctg ggc aac aac 1600
 Pro Met Pro Tyr Ser Ser Val Leu Thr Gln Asn Ser Leu Gly Asn Asn
 330 335 340 345
 cac tcc ttc tcc acc gcc aac ggg ctg agt gtg gac cgg ctg gtc aac 1648
 His Ser Phe Ser Thr Ala Asn Gly Leu Ser Val Asp Arg Leu Val Asn
 350 355 360
 ggg gag atc ccg tac gcc acg cac cac ctc acg gcc gct gcg ctc gcc 1696
 Gly Glu Ile Pro Tyr Ala Thr His His Leu Thr Ala Ala Ala Leu Ala

365 370 375
 gcc tgc gtg ccc tgc ggc ctg tgc gtg ccc tgc tcc ggg acc tac tcc 1744
 Ala Ser Val Pro Cys Gly Leu Ser Val Pro Cys Ser Gly Thr Tyr Ser
 380 385 390
 ctc aac ccc tgc tcc gtc aac ctg ctc gcg ggc cag acc agt tac ttt 1792
 Leu Asn Pro Cys Ser Val Asn Leu Leu Ala Gly Gln Thr Ser Tyr Phe
 395 400 405
 ttc ccc cac gtc ccg cac ccg tca atg act tgc cag acc agc acg tcc 1840
 Phe Pro His Val Pro His Pro Ser Met Thr Ser Gln Thr Ser Thr Ser
 410 415 420 425
 atg agc gcc cgg gcc gcg tcc tcc tct acg tgc ccg cag gcc ccc tgc 1888
 Met Ser Ala Arg Ala Ala Ser Ser Ser Thr Ser Pro Gln Ala Pro Ser
 430 435 440
 acc ctg ccc tgt gag tct tta aga ccc tct ttg cca agt ttt acg aca 1936
 Thr Leu Pro Cys Glu Ser Leu Arg Pro Ser Leu Pro Ser Phe Thr Thr
 445 450 455
 gga ctg tcc ggg gga ctg tct gat tat ttc aca cat caa aat cag ggg 1984
 Gly Leu Ser Gly Gly Leu Ser Asp Tyr Phe Thr His Gln Asn Gln Gly
 460 465 470
 tct tct tcc aac cct tta ata cat taa catccggggg accagactgt 2031
 Ser Ser Ser Asn Pro Leu Ile His
 475 480
 aagtgaacgt ttacacaca ttgcattgt aaatgataat taaaaaata agtccaggga 2091
 ttttttatta agccccccct ccccatcttct gtacgtttgt tcagtcctta gggtcgttta 2151
 ctattctaac acgggtgtgga gtgtcagcga ggtgcaatgt gggagaatac attgtagaat 2211
 ataaggtttg gacgtcaaat tatagtagaa tgtgtatcta aatagtgact gctttgccat 2271
 ttcatcctaaa cctgacaagt ctatctcaac aggcctgccag atttccatgt gtgcagtatt 2331
 ataagttatc atggagctat ctgggtggacg caggccttga gaacaaccta aattatgaag 2391
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gaattatatt ggccatttat tgttttgtcc ttttctttaa agaactgttt ctttcctttt 2511
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 tgagtgtttg ttaatgttgt cttaaaaattt cttagattgt atactgttgt catatgcccg 2871
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 cat 2934

<210> 162

<211> 481

<212> PRT

<213> Mus musculus

<400> 162

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Ser	Phe	Ser	Ile	Asn	Ser	Leu	Val	Pro	Glu	Ala	Val	Gln	Asn	Asp	Asn
				20				25						30	
His	His	Ala	Ser	His	Gly	His	His	Asn	Ser	His	His	Pro	Gln	His	His
				35				40						45	
His	His	His	His	His	His	His	His	Pro	Pro	Pro	Pro	Ala	Pro	Gln	Pro
				50				55						60	
Pro	Pro	Pro	Pro	Pro	Gln	Gln	Gln	Gln	Gln	Gln	Pro	Pro	Pro	Ala	Pro
				65				70						75	
Gln	Pro	Pro	Gln	Ala	Arg	Gly	Ala	Pro	Ala	Ala	Asp	Asp	Asp	Lys	Gly
				85				90						95	
Pro	Gln	Pro	Leu	Leu	Leu	Pro	Pro	Ser	Thr	Ala	Leu	Asp	Gly	Ala	Lys

100	105	110	
Ala Asp Ala Leu Gly Ala Lys Gly Glu Pro Gly Gly Gly Pro Ala Glu			
115	120	125	
Leu Ala Pro Val Gly Pro Asp Glu Lys Glu Lys Gly Ala Gly Ala Gly			
130	135	140	
Gly Glu Glu Lys Lys Gly Ala Gly Glu Gly Gly Lys Asp Gly Glu Gly			
145	150	155	160
Gly Lys Glu Gly Asp Lys Lys Asn Gly Lys Tyr Glu Lys Pro Pro Phe			
165	170	175	
Ser Tyr Asn Ala Leu Ile Met Met Ala Ile Arg Gln Ser Pro Glu Lys			
180	185	190	
Arg Leu Thr Leu Asn Gly Ile Tyr Glu Phe Ile Met Lys Asn Phe Pro			
195	200	205	
Tyr Tyr Arg Glu Asn Lys Gln Gly Trp Gln Asn Ser Ile Arg His Asn			
210	215	220	
Leu Ser Leu Asn Lys Cys Phe Val Lys Val Pro Arg His Tyr Asp Asp			
225	230	235	240
Pro Gly Lys Gly Asn Tyr Trp Met Leu Asp Pro Ser Ser Asp Asp Val			
245	250	255	
Phe Ile Gly Gly Thr Thr Gly Lys Leu Arg Arg Arg Ser Thr Thr Ser			
260	265	270	
Arg Ala Lys Leu Ala Phe Lys Arg Gly Ala Arg Leu Thr Ser Thr Gly			
275	280	285	
Leu Thr Phe Met Asp Arg Ala Gly Ser Leu Tyr Trp Pro Met Ser Pro			
290	295	300	
Phe Leu Ser Leu His His Pro Arg Ala Ser Ser Thr Leu Ser Tyr Asn			
305	310	315	320
Gly Thr Thr Ser Ala Tyr Pro Ser His Pro Met Pro Tyr Ser Ser Val			
325	330	335	

Leu Thr Gln Asn Ser Leu Gly Asn Asn His Ser Phe Ser Thr Ala Asn
 340 345 350
 Gly Leu Ser Val Asp Arg Leu Val Asn Gly Glu Ile Pro Tyr Ala Thr
 355 360 365
 His His Leu Thr Ala Ala Ala Leu Ala Ala Ser Val Pro Cys Gly Leu
 370 375 380
 Ser Val Pro Cys Ser Gly Thr Tyr Ser Leu Asn Pro Cys Ser Val Asn
 385 390 395 400
 Leu Leu Ala Gly Gln Thr Ser Tyr Phe Phe Pro His Val Pro His Pro
 405 410 415
 Ser Met Thr Ser Gln Thr Ser Thr Ser Met Ser Ala Arg Ala Ala Ser
 420 425 430
 Ser Ser Thr Ser Pro Gln Ala Pro Ser Thr Leu Pro Cys Glu Ser Leu
 435 440 445
 Arg Pro Ser Leu Pro Ser Phe Thr Thr Gly Leu Ser Gly Gly Leu Ser
 450 455 460
 Asp Tyr Phe Thr His Gln Asn Gln Gly Ser Ser Ser Asn Pro Leu Ile
 465 470 475 480
 His

<210> 163

<211> 1748

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (260).. (1537)

<400> 163

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 ggccagaccg aactcaggct tttccgagcg aggactgcgt gacgtgcctg ggagaggcaa 180
 ggagcgctg cgggctgct cttgactagc gagagagaag tccgaggcgg ccaagggggg 240
 cgaaacgacc cgacgcaag atg gcg agt aaa gag atg ttt gaa gat act gtg 292

Met Ala Ser Lys Glu Met Phe Glu Asp Thr Val

1 5 10

gag gag cgt gtc atc aac gaa gag tat aaa atc tgg aag aag aat aca 340
 Glu Glu Arg Val Ile Asn Glu Glu Tyr Lys Ile Trp Lys Lys Asn Thr

15 20 25

ccg ttt ctg tat gac ctg gtt atg acc cat gct ctt cag tgg ccc agt 388
 Pro Phe Leu Tyr Asp Leu Val Met Thr His Ala Leu Gln Trp Pro Ser

30 35 40

ctt acc gtt cag tgg ctt cct gaa gtg act aaa cca gaa gga aag gat 436
 Leu Thr Val Gln Trp Leu Pro Glu Val Thr Lys Pro Glu Gly Lys Asp

45 50 55

tat gcc ctt cat tgg cta gtg ctg ggc act cat aca tct gat gag cag 484
 Tyr Ala Leu His Trp Leu Val Leu Gly Thr His Thr Ser Asp Glu Gln

60 65 70 75

aac cat ctg gtg gtt gct cga gtt cat att ccc aat gat gat gca cag 532
 Asn His Leu Val Val Ala Arg Val His Ile Pro Asn Asp Asp Ala Gln

80 85 90

ttt gat gct tcc cac tgt gac agt gac aag gga gaa ttc ggt ggc ttt 580
 Phe Asp Ala Ser His Cys Asp Ser Asp Lys Gly Glu Phe Gly Gly Phe

95 100 105

ggt tct gta aca ggg aaa att gaa tgt gaa att aaa att aac cat gaa 628
 Gly Ser Val Thr Gly Lys Ile Glu Cys Glu Ile Lys Ile Asn His Glu

110 115 120

gga gaa gtg aat cgt gct cgt tat atg cca cag aat cct cac atc att	676
Gly Glu Val Asn Arg Ala Arg Tyr Met Pro Gln Asn Pro His Ile Ile	
125 130 135	
gcc aca aaa aca cca tct tct gat gtt ttg gtt ttt gac tat aca aaa	724
Ala Thr Lys Thr Pro Ser Ser Asp Val Leu Val Phe Asp Tyr Thr Lys	
140 145 150 155	
cac cct gca aaa cca gat cca agt gga gaa tgt aat cct gat ctt aga	772
His Pro Ala Lys Pro Asp Pro Ser Gly Glu Cys Asn Pro Asp Leu Arg	
160 165 170	
tta aga ggt cac caa aag gaa ggc tat ggt ctt tcc tgg aat tct aat	820
Leu Arg Gly His Gln Lys Glu Gly Tyr Gly Leu Ser Trp Asn Ser Asn	
175 180 185	
ctg agt ggg cat ctc ctg agt gca tct gat gac cat act gtc tgc ctg	868
Leu Ser Gly His Leu Leu Ser Ala Ser Asp Asp His Thr Val Cys Leu	
190 195 200	
tgg gat ata aat gca gga cca aag gaa ggc aaa att gtg gat gct aaa	916
Trp Asp Ile Asn Ala Gly Pro Lys Glu Gly Lys Ile Val Asp Ala Lys	
205 210 215	
gca atc ttt act ggc cac tca gct gtt gta gag gat gtg gcc tgg cat	964
Ala Ile Phe Thr Gly His Ser Ala Val Val Glu Asp Val Ala Trp His	
220 225 230 235	
ctg ctg cat gag tcc ttg ttt gga tct gtt gct gat gat cag aaa ctt	1012
Leu Leu His Glu Ser Leu Phe Gly Ser Val Ala Asp Asp Gln Lys Leu	
240 245 250	
atg ata tgg gac acc aga tcc aat acc act tct aag ccg agc cat ttg	1060
Met Ile Trp Asp Thr Arg Ser Asn Thr Thr Ser Lys Pro Ser His Leu	
255 260 265	
gtg gat gca cac acc gct gag gtc aac tgc ctc tca ttc aat ccc tac	1108
Val Asp Ala His Thr Ala Glu Val Asn Cys Leu Ser Phe Asn Pro Tyr	

270	275	280	
agc gag ttc att ctg gca act ggc tct gca gat aag act gta gct tta	1156		
Ser Glu Phe Ile Leu Ala Thr Gly Ser Ala Asp Lys Thr Val Ala Leu			
285	290	295	
tgg gac ctg cgt aat ctg aaa cta aaa ctc cac acc ttt gaa tcg cat	1204		
Trp Asp Leu Arg Asn Leu Lys Leu Lys Leu His Thr Phe Glu Ser His			
300	305	310	315
aag gat gaa att ttc cag gtc cac tgg tct cca cat aat gaa act att	1252		
Lys Asp Glu Ile Phe Gln Val His Trp Ser Pro His Asn Glu Thr Ile			
320	325	330	
ctg gcc tca agt ggt act gat cgc cgc ctg aat gtg tgg gat tta agt	1300		
Leu Ala Ser Ser Gly Thr Asp Arg Arg Leu Asn Val Trp Asp Leu Ser			
335	340	345	
aaa att gga gaa gaa caa tca gca gaa gat gca gaa gat ggg cct cca	1348		
Lys Ile Gly Glu Glu Gln Ser Ala Glu Asp Ala Glu Asp Gly Pro Pro			
350	355	360	
gag ctc ctg ttt att cat gga ggg cac act gcc aag att tct gac ttc	1396		
Glu Leu Leu Phe Ile His Gly Gly His Thr Ala Lys Ile Ser Asp Phe			
365	370	375	
agc tgg aat ccc aat gaa cct tgg gtc att tgc tct gtg tct gaa gat	1444		
Ser Trp Asn Pro Asn Glu Pro Trp Val Ile Cys Ser Val Ser Glu Asp			
380	385	390	395
aac atc atg cag ata tgg cag atg gct gaa aat att tac aat gat gaa	1492		
Asn Ile Met Gln Ile Trp Gln Met Ala Glu Asn Ile Tyr Asn Asp Glu			
400	405	410	
gag tca gat gtc acg gca tcg gaa ctg gag ggg caa gga tct taa	1537		
Glu Ser Asp Val Thr Ala Ser Glu Leu Glu Gly Gln Gly Ser			
415	420	425	
acccaaagta tgagttgttt ttattgaatg tattgctaca tgaatgcttg atttgtcaag	1597		

cgccaaaaag gcatgtata gtaggaatg taagtgggac ggcttciggc attctttacc 1657
 ctctgattct agcacitica agtgagcigt tgcgtacigt atcataattgt agctattagg 1717
 ggataaaaaag gaatgttgct taagaacgga c 1748

<210> 164

<211> 425

<212> PRT

<213> Mus musculus

<400> 164

Met	Ala	Ser	Lys	Glu	Met	Phe	Glu	Asp	Thr	Val	Glu	Glu	Arg	Val	Ile
1				5					10				15		
Asn	Glu	Glu	Tyr	Lys	Ile	Trp	Lys	Lys	Asn	Thr	Pro	Phe	Leu	Tyr	Asp
				20				25					30		
Leu	Val	Met	Thr	His	Ala	Leu	Gln	Trp	Pro	Ser	Leu	Thr	Val	Gln	Trp
				35				40					45		
Leu	Pro	Glu	Val	Thr	Lys	Pro	Glu	Gly	Lys	Asp	Tyr	Ala	Leu	His	Trp
		50				55				60					
Leu	Val	Leu	Gly	Thr	His	Thr	Ser	Asp	Glu	Gln	Asn	His	Leu	Val	Val
		65			70				75				80		
Ala	Arg	Val	His	Ile	Pro	Asn	Asp	Asp	Ala	Gln	Phe	Asp	Ala	Ser	His
				85				90					95		
Cys	Asp	Ser	Asp	Lys	Gly	Glu	Phe	Gly	Gly	Phe	Gly	Ser	Val	Thr	Gly
				100				105					110		
Lys	Ile	Glu	Cys	Glu	Ile	Lys	Ile	Asn	His	Glu	Gly	Glu	Val	Asn	Arg
				115				120					125		
Ala	Arg	Tyr	Met	Pro	Gln	Asn	Pro	His	Ile	Ile	Ala	Thr	Lys	Thr	Pro
				130				135					140		
Ser	Ser	Asp	Val	Leu	Val	Phe	Asp	Tyr	Thr	Lys	His	Pro	Ala	Lys	Pro

145	150	155	160
Asp Pro Ser Gly Glu Cys Asn Pro Asp Leu Arg Leu Arg Gly His Gln			
165	170	175	
Lys Glu Gly Tyr Gly Leu Ser Trp Asn Ser Asn Leu Ser Gly His Leu			
180	185	190	
Leu Ser Ala Ser Asp Asp His Thr Val Cys Leu Trp Asp Ile Asn Ala			
195	200	205	
Gly Pro Lys Glu Gly Lys Ile Val Asp Ala Lys Ala Ile Phe Thr Gly			
210	215	220	
His Ser Ala Val Val Glu Asp Val Ala Trp His Leu Leu His Glu Ser			
225	230	235	240
Leu Phe Gly Ser Val Ala Asp Asp Gln Lys Leu Met Ile Trp Asp Thr			
245	250	255	
Arg Ser Asn Thr Thr Ser Lys Pro Ser His Leu Val Asp Ala His Thr			
260	265	270	
Ala Glu Val Asn Cys Leu Ser Phe Asn Pro Tyr Ser Glu Phe Ile Leu			
275	280	285	
Ala Thr Gly Ser Ala Asp Lys Thr Val Ala Leu Trp Asp Leu Arg Asn			
290	295	300	
Leu Lys Leu Lys Leu His Thr Phe Glu Ser His Lys Asp Glu Ile Phe			
305	310	315	320
Gln Val His Trp Ser Pro His Asn Glu Thr Ile Leu Ala Ser Ser Gly			
325	330	335	
Thr Asp Arg Arg Leu Asn Val Trp Asp Leu Ser Lys Ile Gly Glu Glu			
340	345	350	
Gln Ser Ala Glu Asp Ala Glu Asp Gly Pro Pro Glu Leu Leu Phe Ile			
355	360	365	
His Gly Gly His Thr Ala Lys Ile Ser Asp Phe Ser Trp Asn Pro Asn			
370	375	380	

Glu Pro Trp Val Ile Cys Ser Val Ser Glu Asp Asn Ile Met Gln Ile
 385 390 395 400
 Trp Gln Met Ala Glu Asn Ile Tyr Asn Asp Glu Glu Ser Asp Val Thr
 405 410 415
 Ala Ser Glu Leu Glu Gly Gln Gly Ser
 420 425

<210> 165

<211> 1594

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (85).. (1506)

<400> 165

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 cccgtgccgg ggcgcggcga aggg atg tgg ggc ttt gcg gga gga agg ctt 111
 Met Trp Gly Phe Ala Gly Gly Arg Leu
 1 5
 ttc ggc atc ttc tcg gcc ccg gtg ctg gtg gcg gtg gtt tgc tgc gct 159
 Phe Gly Ile Phe Ser Ala Pro Val Leu Val Ala Val Val Cys Cys Ala
 10 15 20 25
 cag agc gta aac gac ccc ggg aac atg tcc ttt gtg aag gag acg gtc 207
 Gln Ser Val Asn Asp Pro Gly Asn Met Ser Phe Val Lys Glu Thr Val
 30 35 40
 gac aag ctg ttg aaa ggc tac gac att cgc ctg aga ccc gac ttc ggg 255
 Asp Lys Leu Leu Lys Gly Tyr Asp Ile Arg Leu Arg Pro Asp Phe Gly

45	50	55	
ggt ccc cca gtc tgc gtg ggg atg aac atc gac atc gcc agc atc gac			303
Gly Pro Pro Val-Cys Val Gly Met Asn Ile Asp Ile Ala Ser Ile Asp			
60	65	70	
atg gtt tct gaa gtc aac atg gat tat acc tta act atg tat ttc caa			351
Met Val Ser Glu Val Asn Met Asp Tyr Thr Leu Thr Met Tyr Phe Gln			
75	80	85	
caa tac tgg aga gat aaa agg ctc gcc tat tct ggg atc cct ctc aac			399
Gln Tyr Trp Arg Asp Lys Arg Leu Ala Tyr Ser Gly Ile Pro Leu Asn			
90	95	100	105
ctc acg ctt gac aat cga gtg gct gac cag ctc tgg gtg ccc gac aca			447
Leu Thr Leu Asp Asn Arg Val Ala Asp Gln Leu Trp Val Pro Asp Thr			
110	115	120	
tat ttc tta aat gac aaa aag tca ttt gtc cac gga gtg aca gtg aaa			495
Tyr Phe Leu Asn Asp Lys Lys Ser Phe Val His Gly Val Thr Val Lys			
125	130	135	
aac cgc atg atc cgc ctc cac cct gat ggg aca gtg ctg tat ggg ctc			543
Asn Arg Met Ile Arg Leu His Pro Asp Gly Thr Val Leu Tyr Gly Leu			
140	145	150	
agg atc act acg aca gca gcg tgc atg atg gac ctc aga aga tac cca			591
Arg Ile Thr Thr Thr Ala Ala Cys Met Met Asp Leu Arg Arg Tyr Pro			
155	160	165	
ctg gat gag caa aac tgc act ttg gaa att gaa agc tat ggc tac act			639
Leu Asp Glu Gln Asn Cys Thr Leu Glu Ile Glu Ser Tyr Gly Tyr Thr			
170	175	180	185
acg gat gac att gaa ttt tac tgg cgt ggc ggg gac aag gct gtc act			687
Thr Asp Asp Ile Glu Phe Tyr Trp Arg Gly Gly Asp Lys Ala Val Thr			
190	195	200	
ggc gtg gaa agg atc gag ctc cca cag ttc tcc att gta gag cac cgt			735

Gly Val Glu Arg Ile Glu Leu Pro Gln Phe Ser Ile Val Glu His Arg	
205	210
ctg gtc tcc agg aat gtt gtc ttc gcc aca ggt gcc tat cct cga ctt	783
Leu Val Ser Arg Asn Val Val Phe Ala Thr Gly Ala Tyr Pro Arg Leu	
220	225
tca ttg agt ttt cgg ttg aag aga aat atc ggg tac ttc att ctg cag	831
Ser Leu Ser Phe Arg Leu Lys Arg Asn Ile Gly Tyr Phe Ile Leu Gln	
235	240
acg tat atg ccc tca atc ctg atc aca atc ctc tgc tgg gtc tcc ttc	879
Thr Tyr Met Pro Ser Ile Leu Ile Thr Ile Leu Ser Trp Val Ser Phe	
250	255
tgg atc aat tat gat gca tct gct gct cga gtt gcc ctt ggg att acc	927
Trp Ile Asn Tyr Asp Ala Ser Ala Ala Arg Val Ala Leu Gly Ile Thr	
270	275
acc gtg ctc acc atg aca acc atc aac act cac ctt cgg gag act cta	975
Thr Val Leu Thr Met Thr Thr Ile Asn Thr His Leu Arg Glu Thr Leu	
285	290
ccc aaa att ccc tat gtc aaa gcc atc gac atg tac ctg atg ggc tgc	1023
Pro Lys Ile Pro Tyr Val Lys Ala Ile Asp Met Tyr Leu Met Gly Cys	
300	305
ttt gtc ttt gta ttc ctg gca ctt ctg gag tat gcc ttt gtc aac tac	1071
Phe Val Phe Val Phe Leu Ala Leu Leu Glu Tyr Ala Phe Val Asn Tyr	
315	320
att ttc ttt gga aga ggt ccc caa agg cag aag aag ctt gcg gag aag	1119
Ile Phe Phe Gly Arg Gly Pro Gln Arg Gln Lys Lys Leu Ala Glu Lys	
330	335
aca gcc aag gcc aag aat gat cgt tct aag agt gaa ata aac cgg gtg	1167
Thr Ala Lys Ala Lys Asn Asp Arg Ser Lys Ser Glu Ile Asn Arg Val	
350	355
	360

gat gct cac ggg aat atc cta tta gca ccg atg gat gtt cac aat gaa 1215
Asp Ala His Gly Asn Ile Leu Leu Ala Pro Met Asp Val His Asn Glu
365 370 375
atg aat gag gtt gca ggc agc gtt ggt gac acc agg aat tca gca ata 1263
Met Asn Glu Val Ala Gly Ser Val Gly Asp Thr Arg Asn Ser Ala Ile
380 385 390
tcc ttt gac aac tca gga atc cag tat agg aaa cag agc atg ccc aag 1311
Ser Phe Asp Asn Ser Gly Ile Gln Tyr Arg Lys Gln Ser Met Pro Lys
395 400 405
gaa ggg cat ggg cgg tac atg gga gac aga agc atc ccg cac aag aag 1359
Glu Gly His Gly Arg Tyr Met Gly Asp Arg Ser Ile Pro His Lys Lys
410 415 420 425
acc cac cta cgg agg agg tct tca cag ctc aaa atc aaa atc cct gat 1407
Thr His Leu Arg Arg Arg Ser Ser Gln Leu Lys Ile Lys Ile Pro Asp
430 435 440
cta acc gat gtg aat gcc ata gac aga tgg tcc cgc atc gtg ttt cca 1455
Leu Thr Asp Val Asn Ala Ile Asp Arg Trp Ser Arg Ile Val Phe Pro
445 450 455
ttc acc ttt tct ctc ttc aat tta gtt tac tgg ctg tac tat gtt aac 1503
Phe Thr Phe Ser Leu Phe Asn Leu Val Tyr Trp Leu Tyr Tyr Val Asn
460 465 470
tga gtgactgtac ttgatttttc aaagacttca tttaacactg agtgaaatat 1556
taccctgcct gtcaagtttt tataccagta cacataca 1594

<210> 166

<211> 473

<212> PRT

<213> Mus musculus

<400> 166

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 Val Leu Val Ala Val Val Cys Cys Ala Gln Ser Val Asn Asp Pro Gly
 20 25 30
 Asn Met Ser Phe Val Lys Glu Thr Val Asp Lys Leu Leu Lys Gly Tyr
 35 40 45
 Asp Ile Arg Leu Arg Pro Asp Phe Gly Gly Pro Pro Val Cys Val Gly
 50 55 60
 Met Asn Ile Asp Ile Ala Ser Ile Asp Met Val Ser Glu Val Asn Met
 65 70 75 80
 Asp Tyr Thr Leu Thr Met Tyr Phe Gln Gln Tyr Trp Arg Asp Lys Arg
 85 90 95
 Leu Ala Tyr Ser Gly Ile Pro Leu Asn Leu Thr Leu Asp Asn Arg Val
 100 105 110
 Ala Asp Gln Leu Trp Val Pro Asp Thr Tyr Phe Leu Asn Asp Lys Lys
 115 120 125
 Ser Phe Val His Gly Val Thr Val Lys Asn Arg Met Ile Arg Leu His
 130 135 140
 Pro Asp Gly Thr Val Leu Tyr Gly Leu Arg Ile Thr Thr Thr Ala Ala
 145 150 155 160
 Cys Met Met Asp Leu Arg Arg Tyr Pro Leu Asp Glu Gln Asn Cys Thr
 165 170 175
 Leu Glu Ile Glu Ser Tyr Gly Tyr Thr Thr Asp Asp Ile Glu Phe Tyr
 180 185 190
 Trp Arg Gly Gly Asp Lys Ala Val Thr Gly Val Glu Arg Ile Glu Leu
 195 200 205
 Pro Gln Phe Ser Ile Val Glu His Arg Leu Val Ser Arg Asn Val Val
 210 215 220

Phe	Ala	Thr	Gly	Ala	Tyr	Pro	Arg	Leu	Ser	Leu	Ser	Phe	Arg	Leu	Lys
225					230				235						240
Arg	Asn	Ile	Gly	Tyr	Phe	Ile	Leu	Gln	Thr	Tyr	Met	Pro	Ser	Ile	Leu
			245					250						255	
Ile	Thr	Ile	Leu	Ser	Trp	Val	Ser	Phe	Trp	Ile	Asn	Tyr	Asp	Ala	Ser
		260					265					270			
Ala	Ala	Arg	Val	Ala	Leu	Gly	Ile	Thr	Thr	Val	Leu	Thr	Met	Thr	Thr
	275					280					285				
Ile	Asn	Thr	His	Leu	Arg	Glu	Thr	Leu	Pro	Lys	Ile	Pro	Tyr	Val	Lys
290					295				300						
Ala	Ile	Asp	Met	Tyr	Leu	Met	Gly	Cys	Phe	Val	Phe	Val	Phe	Leu	Ala
305				310				315						320	
Leu	Leu	Glu	Tyr	Ala	Phe	Val	Asn	Tyr	Ile	Phe	Phe	Gly	Arg	Gly	Pro
		325					330					335			
Gln	Arg	Gln	Lys	Lys	Leu	Ala	Glu	Lys	Thr	Ala	Lys	Ala	Lys	Asn	Asp
	340					345					350				
Arg	Ser	Lys	Ser	Glu	Ile	Asn	Arg	Val	Asp	Ala	His	Gly	Asn	Ile	Leu
	355				360				365						
Leu	Ala	Pro	Met	Asp	Val	His	Asn	Glu	Met	Asn	Glu	Val	Ala	Gly	Ser
370					375				380						
Val	Gly	Asp	Thr	Arg	Asn	Ser	Ala	Ile	Ser	Phe	Asp	Asn	Ser	Gly	Ile
385				390					395					400	
Gln	Tyr	Arg	Lys	Gln	Ser	Met	Pro	Lys	Glu	Gly	His	Gly	Arg	Tyr	Met
		405					410					415			
Gly	Asp	Arg	Ser	Ile	Pro	His	Lys	Lys	Thr	His	Leu	Arg	Arg	Arg	Ser
		420					425				430				
Ser	Gln	Leu	Lys	Ile	Lys	Ile	Pro	Asp	Leu	Thr	Asp	Val	Asn	Ala	Ile
	435					440					445				
Asp	Arg	Trp	Ser	Arg	Ile	Val	Phe	Pro	Phe	Thr	Phe	Ser	Leu	Phe	Asn

450 455 460
 Leu Val Tyr Trp Leu Tyr Tyr Val Asn

465 470

<210> 167

<211> 3597

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (95).. (2491)

<400> 167

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 agcccgcccg cggtcggcg gacgctgca aaag atg aat ttg caa ctg gtt tcc 115

Met Asn Leu Gln Leu Val Ser

1

5

tgg att gga ttg atc agt ttg att tgt tct gta ttt ggc caa aca gat 163
 Trp Ile Gly Leu Ile Ser Leu Ile Cys Ser Val Phe Gly Gln Thr Asp

10

15

20

aaa aat aga tgt tta aaa gca aat gcc aaa tct tgc gga gaa tgt ata 211
 Lys Asn Arg Cys Leu Lys Ala Asn Ala Lys Ser Cys Gly Glu Cys Ile

25

30

35

caa gca ggg cca aat tgt ggg tgg tgt aca aat acg aca ttt ttg caa 259
 Gln Ala Gly Pro Asn Cys Gly Trp Cys Thr Asn Thr Thr Phe Leu Gln

40

45

50

55

gaa gga atg cct act tct gca cga tgt gat gat tta gaa gct ttg aaa 307
 Glu Gly Met Pro Thr Ser Ala Arg Cys Asp Asp Leu Glu Ala Leu Lys

60	65	70	
aag aag ggt tgc cag cca agt gac ata gag aat ccc aga ggc tct caa			355
Lys Lys Gly Cys Gln Pro Ser Asp Ile Glu Asn Pro Arg Gly Ser Gln			
75	80	85	
act ata aag aaa aat aaa aat gtc acc aat cgc agc aaa ggg atg gca			403
Thr Ile Lys Lys Asn Lys Asn Val Thr Asn Arg Ser Lys Gly Met Ala			
90	95	100	
gag aag ctc cgg cca gaa gac att act cag atc caa cca caa cag ctg			451
Glu Lys Leu Arg Pro Glu Asp Ile Thr Gln Ile Gln Pro Gln Gln Leu			
105	110	115	
ctt cta aaa ttg aga tca gga gaa cca cag aag ttt aca tta aaa ttc			499
Leu Leu Lys Leu Arg Ser Gly Glu Pro Gln Lys Phe Thr Leu Lys Phe			
120	125	130	135
aag agg gct gaa gat tac cct att gat ctc tac tac ctt atg gat ctc			547
Lys Arg Ala Glu Asp Tyr Pro Ile Asp Leu Tyr Tyr Leu Met Asp Leu			
140	145	150	
tcc tac tct atg aaa gat gat ctg gag aat gtg aaa agt ctt gga acg			595
Ser Tyr Ser Met Lys Asp Asp Leu Glu Asn Val Lys Ser Leu Gly Thr			
155	160	165	
gat ttg atg aat gaa atg agg agg att act tca gac ttc cgc att ggc			643
Asp Leu Met Asn Glu Met Arg Arg Ile Thr Ser Asp Phe Arg Ile Gly			
170	175	180	
ttt ggc tca ttt gtg gag aaa act gtg atg ccg tat att agc aca acc			691
Phe Gly Ser Phe Val Glu Lys Thr Val Met Pro Tyr Ile Ser Thr Thr			
185	190	195	
cca gca aag cta aga aat cct tgt aca agt gaa caa aac tgc acc agc			739
Pro Ala Lys Leu Arg Asn Pro Cys Thr Ser Glu Gln Asn Cys Thr Ser			
200	205	210	215
cca ttt agc tac aaa aat gtg ctt agt ctt act gac aga gga gag ttt			787

Pro Phe Ser Tyr Lys Asn Val Leu Ser Leu Thr Asp Arg Gly Glu Phe
 220 225 230
 ttc aat gaa ctt gtt ggt cag caa cgc ata tct gga aac ttg gat tct 835
 Phe Asn Glu Leu Val Gly Gln Gln Arg Ile Ser Gly Asn Leu Asp Ser
 235 240 245
 cca gaa ggt ggc ttt gat gca atc atg cag gtt gcg gtt tgt gga tcg 883
 Pro Glu Gly Gly Phe Asp Ala Ile Met Gln Val Ala Val Cys Gly Ser
 250 255 260
 ctg att ggc tgg agg aat gta aca cga ctg ctg gtg ttt tcc acg gat 931
 Leu Ile Gly Trp Arg Asn Val Thr Arg Leu Leu Val Phe Ser Thr Asp
 265 270 275
 gct ggg ttt cac ttt gct gga gat ggg aaa ctt ggt ggt att gtt tta 979
 Ala Gly Phe His Phe Ala Gly Asp Gly Lys Leu Gly Gly Ile Val Leu
 280 285 290 295
 ccc aat gat gga caa tgt cac ctg gaa aat aat gta tat aca atg agc 1027
 Pro Asn Asp Gly Gln Cys His Leu Glu Asn Asn Val Tyr Thr Met Ser
 300 305 310
 cat tac tat gat tat cct tca att gct cac ctt gtt cag aaa cta agt 1075
 His Tyr Tyr Asp Tyr Pro Ser Ile Ala His Leu Val Gln Lys Leu Ser
 315 320 325
 gaa aat aat att cag acg att ttt gca gtt act gaa gag ttc caa cct 1123
 Glu Asn Asn Ile Gln Thr Ile Phe Ala Val Thr Glu Glu Phe Gln Pro
 330 335 340
 gtt tac aag gaa ttg aag aat ttg att cct aag tca gca gtg ggc aca 1171
 Val Tyr Lys Glu Leu Lys Asn Leu Ile Pro Lys Ser Ala Val Gly Thr
 345 350 355
 ctg tct gga aac tct agt aat gtg atc cag cta atc atc gat gcc tac 1219
 Leu Ser Gly Asn Ser Ser Asn Val Ile Gln Leu Ile Ile Asp Ala Tyr
 360 365 370 375

aac tct ctt tct tca gaa gtc att ctg gaa aat agc aaa ttg cca gac	1267
Asn Ser Leu Ser Ser Glu Val Ile Leu Glu Asn Ser Lys Leu Pro Asp	
380 385 390	
gga gta aca ata aat tac aaa tcc tat tgc aag aat ggg gtg aat ggg	1315
Gly Val Thr Ile Asn Tyr Lys Ser Tyr Cys Lys Asn Gly Val Asn Gly	
395 400 405	
aca gga gaa aat gga cga aag tgt tcc aac att tct att gga gat gag	1363
Thr Gly Glu Asn Gly Arg Lys Cys Ser Asn Ile Ser Ile Gly Asp Glu	
410 415 420	
gtt caa ttt gaa att agc ata act gct aat aaa tgt cca aat aag gag	1411
Val Gln Phe Glu Ile Ser Ile Thr Ala Asn Lys Cys Pro Asn Lys Glu	
425 430 435	
tct gaa acc att aaa att aaa cct ctg ggc ttc act gaa gaa gta gag	1459
Ser Glu Thr Ile Lys Ile Lys Pro Leu Gly Phe Thr Glu Glu Val Glu	
440 445 450 455	
gtc gtt ctt cag ttc atc tgt aag tgc aat tgt caa agc cat ggc atc	1507
Val Val Leu Gln Phe Ile Cys Lys Cys Asn Cys Gln Ser His Gly Ile	
460 465 470	
cca gcc agt ccc aag tgc cat gag gga aat ggg aca ttt gag tgt gga	1555
Pro Ala Ser Pro Lys Cys His Glu Gly Asn Gly Thr Phe Glu Cys Gly	
475 480 485	
gcc tgc agg tgc aat gag ggg cgt gtt ggg agg cac tgt gaa tgt agc	1603
Ala Cys Arg Cys Asn Glu Gly Arg Val Gly Arg His Cys Glu Cys Ser	
490 495 500	
aca gat gaa gtg aac agt gaa gac atg gac gct tac tgc agg aaa gag	1651
Thr Asp Glu Val Asn Ser Glu Asp Met Asp Ala Tyr Cys Arg Lys Glu	
505 510 515	
aac agt tcg gaa atc tgc agt aac aat gga gaa tgt gtc tgt gga cag	1699
Asn Ser Ser Glu Ile Cys Ser Asn Asn Gly Glu Cys Val Cys Gly Gln	

520	525	530	535	
tgt gtg tgt agg aag aga gat aat aca aat gaa att tac tct gga aaa	1747			
Cys Val Cys Arg Lys Arg Asp Asn Thr Asn Glu Ile Tyr Ser Gly Lys				
540	545	550		
ttc tgc gag tgt gat aac ttc aac tgt gat agg tct aat ggc tta att	1795			
Phe Cys Glu Cys Asp Asn Phe Asn Cys Asp Arg Ser Asn Gly Leu Ile				
555	560	565		
tgt gga ggc aat ggc gtg tgc agg tgt cgt gtt tgt gaa tgc tat ccc	1843			
Cys Gly Gly Asn Gly Val Cys Arg Cys Arg Val Cys Glu Cys Tyr Pro				
570	575	580		
aat tac act ggc agt gca tgt gac tgt tct ttg gac act ggt cca tgt	1891			
Asn Tyr Thr Gly Ser Ala Cys Asp Cys Ser Leu Asp Thr Gly Pro Cys				
585	590	595		
cta gcg tca aat ggt cag atc tgc aat ggc cgg ggt att tgt gaa tgt	1939			
Leu Ala Ser Asn Gly Gln Ile Cys Asn Gly Arg Gly Ile Cys Glu Cys				
600	605	610	615	
ggg gct tgt aag tgc aca gat ccc aag ttt caa ggg cca act tgt gag	1987			
Gly Ala Cys Lys Cys Thr Asp Pro Lys Phe Gln Gly Pro Thr Cys Glu				
620	625	630		
aca tgt cag acc tgc ctt ggc gtc tgt gca gag cat aaa gaa tgt gtt	2035			
Thr Cys Gln Thr Cys Leu Gly Val Cys Ala Glu His Lys Glu Cys Val				
635	640	645		
cag tgc aga gcc ttc aat aaa gga gaa aag aaa gac acg tgt gca cag	2083			
Gln Cys Arg Ala Phe Asn Lys Gly Glu Lys Lys Asp Thr Cys Ala Gln				
650	655	660		
gag tgc tcc cac ttc aat ctc acc aaa gta gaa agc agg gag aag ttg	2131			
Glu Cys Ser His Phe Asn Leu Thr Lys Val Glu Ser Arg Glu Lys Leu				
665	670	675		
ccc cag ccg gtg cag gtc gat cct gtg acc cat tgc aag gag aag gac	2179			

Pro Gln Pro Val Gln Val Asp Pro Val Thr His Cys Lys Glu Lys Asp
 680 685 690 695
 att gat gac tgc tgg ttc tat ttc acc tat tca gtg aat ggc aac aat 2227
 Ile Asp Asp Cys Trp Phe Tyr Phe Thr Tyr Ser Val Asn Gly Asn Asn
 700 705 710
 gaa gct atc gtg cat gtt gtg gag act cca gac tgt cct act ggt ccc 2275
 Glu Ala Ile Val His Val Val Glu Thr Pro Asp Cys Pro Thr Gly Pro
 715 720 725
 gac atc atc cca att gta gca ggc gtg gtt gct gga att gtt ctt att 2323
 Asp Ile Ile Pro Ile Val Ala Gly Val Val Ala Gly Ile Val Leu Ile
 730 735 740
 ggc ctt gcc ttg ctg ctg att tgg aaa ctt tta atg ata att cat gac 2371
 Gly Leu Ala Leu Leu Leu Ile Trp Lys Leu Leu Met Ile Ile His Asp
 745 750 755
 aga agg gaa ttt gct aaa ttt gaa aag gag aaa atg aat gcc aag tgg 2419
 Arg Arg Glu Phe Ala Lys Phe Glu Lys Glu Lys Met Asn Ala Lys Trp
 760 765 770 775
 gac acg ggt gaa aat cct att tac aag agt gcc gtg aca act gtg gtc 2467
 Asp Thr Gly Glu Asn Pro Ile Tyr Lys Ser Ala Val Thr Thr Val Val
 780 785 790
 aat ccg aag tat gag gga aaa tga atcctactca ggcggatttt gcaacaccaa 2521
 Asn Pro Lys Tyr Glu Gly Lys
 795
 gctcacagca gcagcatctt agtcacagta gggtagtttt ggggctctgt ggccagggtt 2581
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<211> 798

<212> PRT

<213> Mus musculus

<400> 168

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Lys Ser Cys Gly Glu Cys Ile Gln Ala Gly Pro Asn Cys Gly Trp Cys

35 40 45

Thr Asn Thr Thr Phe Leu Gln Glu Gly Met Pro Thr Ser Ala Arg Cys

50 55 60

Asp Asp Leu Glu Ala Leu Lys Lys Lys Gly Cys Gln Pro Ser Asp Ile

65 70 75 80

Glu Asn Pro Arg Gly Ser Gln Thr Ile Lys Lys Asn Lys Asn Val Thr
 85 90 95
 Asn Arg Ser Lys Gly Met Ala Glu Lys Leu Arg Pro Glu Asp Ile Thr
 100 105 110
 Gln Ile Gln Pro Gln Gln Leu Leu Leu Lys Leu Arg Ser Gly Glu Pro
 115 120 125
 Gln Lys Phe Thr Leu Lys Phe Lys Arg Ala Glu Asp Tyr Pro Ile Asp
 130 135 140
 Leu Tyr Tyr Leu Met Asp Leu Ser Tyr Ser Met Lys Asp Asp Leu Glu
 145 150 155 160
 Asn Val Lys Ser Leu Gly Thr Asp Leu Met Asn Glu Met Arg Arg Ile
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 Thr Ser Asp Phe Arg Ile Gly Phe Gly Ser Phe Val Glu Lys Thr Val
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 Met Pro Tyr Ile Ser Thr Thr Pro Ala Lys Leu Arg Asn Pro Cys Thr
 195 200 205
 Ser Glu Gln Asn Cys Thr Ser Pro Phe Ser Tyr Lys Asn Val Leu Ser
 210 215 220
 Leu Thr Asp Arg Gly Glu Phe Phe Asn Glu Leu Val Gly Gln Gln Arg
 225 230 235 240
 Ile Ser Gly Asn Leu Asp Ser Pro Glu Gly Gly Phe Asp Ala Ile Met
 245 250 255
 Gln Val Ala Val Cys Gly Ser Leu Ile Gly Trp Arg Asn Val Thr Arg
 260 265 270
 Leu Leu Val Phe Ser Thr Asp Ala Gly Phe His Phe Ala Gly Asp Gly
 275 280 285
 Lys Leu Gly Gly Ile Val Leu Pro Asn Asp Gly Gln Cys His Leu Glu
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 Asn Asn Val Tyr Thr Met Ser His Tyr Tyr Asp Tyr Pro Ser Ile Ala

305	310	315	320
His	Leu Val Gln Lys Leu Ser Glu Asn Asn Ile Gln Thr Ile Phe Ala		
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Val Thr Glu Glu Phe Gln Pro Val Tyr Lys Glu Leu Lys Asn Leu Ile			
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Pro Lys Ser Ala Val Gly Thr Leu Ser Gly Asn Ser Ser Asn Val Ile			
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Gln Leu Ile Ile Asp Ala Tyr Asn Ser Leu Ser Ser Glu Val Ile Leu			
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Glu Asn Ser Lys Leu Pro Asp Gly Val Thr Ile Asn Tyr Lys Ser Tyr			
385	390	395	400
Cys Lys Asn Gly Val Asn Gly Thr Gly Glu Asn Gly Arg Lys Cys Ser			
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Asn Ile Ser Ile Gly Asp Glu Val Gln Phe Glu Ile Ser Ile Thr Ala			
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Gly Phe Thr Glu Glu Val Glu Val Val Leu Gln Phe Ile Cys Lys Cys			
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Asn Cys Gln Ser His Gly Ile Pro Ala Ser Pro Lys Cys His Glu Gly			
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Asn Gly Thr Phe Glu Cys Gly Ala Cys Arg Cys Asn Glu Gly Arg Val			
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Gly Glu Cys Val Cys Gly Gln Cys Val Cys Arg Lys Arg Asp Asn Thr			
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 Thr His Cys Lys Glu Lys Asp Ile Asp Asp Cys Trp Phe Tyr Phe Thr
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 Val Ala Gly Ile Val Leu Ile Gly Leu Ala Leu Leu Leu Ile Trp Lys
 740 745 750
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<211> 2063

<212> DNA

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<220>

<221> CDS

<222> (73).. (648)

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 Val Gly Lys Thr Cys Leu Leu Ile Ser Tyr Thr Thr Asn Lys Phe Pro

15 20 25

tcg gaa tat gta cca act gtt ttt gac aac tat gca gtc aca gtt atg 207
 Ser Glu Tyr Val Pro Thr Val Phe Asp Asn Tyr Ala Val Thr Val Met

30 35 40 45

att ggt gga gag cca tac act ctt gga ctt ttt gat act gca ggg caa 255
 Ile Gly Gly Glu Pro Tyr Thr Leu Gly Leu Phe Asp Thr Ala Gly Gln

50 55 60

gag gat tat gac aga cta cga ccg cta agt tat cca cag aca gat gtt 303
 Glu Asp Tyr Asp Arg Leu Arg Pro Leu Ser Tyr Pro Gln Thr Asp Val

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Lys Glu Lys Trp Val Pro Glu Ile Thr His His Cys Pro Lys Thr Pro			
95	100	105	
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Phe Leu Leu Val Gly Thr Gln Ile Asp Leu Arg Asp Asp Pro Ser Thr			
110	115	120	125
att gag aaa ctt gcc aag aac aaa cag aag cct att act cca gag act	495		
Ile Glu Lys Leu Ala Lys Asn Lys Gln Lys Pro Ile Thr Pro Glu Thr			
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Ala Glu Lys Leu Ala Arg Asp Leu Lys Ala Val Lys Tyr Val Glu Cys			
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Ser Ala Leu Thr Gln Lys Gly Leu Lys Asn Val Phe Asp Glu Ala Ile			
160	165	170	
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Leu Ala Ala Leu Glu Pro Pro Glu Pro Lys Lys Ser Arg Arg Cys Val			
175	180	185	
ctg cta tga acgcatctcc agagcccttt ctgcacagct ggtgttgtcg	688		
Leu Leu			
190			
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<212> PRT

<213> Mus musculus

<400> 170

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Asp Arg Leu Arg Pro Leu Ser Tyr Pro Gln Thr Asp Val Phe Leu Val		
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Cys Phe Ser Val Val Ser Pro Ser Ser Phe Glu Asn Val Lys Glu Lys		
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Trp Val Pro Glu Ile Thr His His Cys Pro Lys Thr Pro Phe Leu Leu		
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Val Gly Thr Gln Ile Asp Leu Arg Asp Asp Pro Ser Thr Ile Glu Lys		
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Leu Ala Lys Asn Lys Gln Lys Pro Ile Thr Pro Glu Thr Ala Glu Lys		
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Leu Ala Arg Asp Leu Lys Ala Val Lys Tyr Val Glu Cys Ser Ala Leu		
145	150	155
Thr Gln Lys Gly Leu Lys Asn Val Phe Asp Glu Ala Ile Leu Ala Ala		
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<220>

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<222> (324).. (2423)

<400> 171

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 atgcggagtc gccgcggcgg agcgatcggg gctacagcac cggtccttgg gagactatag 300
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Met Glu Pro Phe Cys Pro Leu Leu Leu Ala

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5

10

agt ttt agc ttg tgc ctc gcc aga gct ggc cag ggc aac gac acc acc 401

Ser Phe Ser Leu Ser Leu Ala Arg Ala Gly Gln Gly Asn Asp Thr Thr

15

20

25

cca aca gag agc aac tgg acc agc aca act gca ggc cct ccg gac cct 449

Pro Thr Glu Ser Asn Trp Thr Ser Thr Thr Ala Gly Pro Pro Asp Pro

30

35

40

ggt gca tcc cag ccg ctg ctc acc tgg ctg ctg ctg ccc ctg ctc ctc 497

Gly Ala Ser Gln Pro Leu Leu Thr Trp Leu Leu Leu Pro Leu Leu Leu

45

50

55

ctc ctg ttc ctg ctt gca gcc tac ttc ttc agg ttc cgg aag cag agg 545

Leu Leu Phe Leu Leu Ala Ala Tyr Phe Phe Arg Phe Arg Lys Gln Arg

60

65

70

aag gcc gtg gtc agc agc aac gac aag aaa atg cct aac ggg atc tta 593

Lys Ala Val Val Ser Ser Asn Asp Lys Lys Met Pro Asn Gly Ile Leu

75

80

85

90

gaa gag caa gag cag cag aga gtg atg ctg ctg agc aga tct cca tca 641

Glu Glu Gln Glu Gln Gln Arg Val Met Leu Leu Ser Arg Ser Pro Ser

95

100

105

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Gly Pro Lys Lys Phe Phe Pro Ile Pro Val Glu His Leu Glu Glu Glu
      110              115              120
atc cgg gtg aga tct gcg gat gac tgc aag cga ttc cga gag gag ttc      737
Ile Arg Val Arg Ser Ala Asp Asp Cys Lys Arg Phe Arg Glu Glu Phe
      125              130              135
aat tca ttg cca tct gga cac ata caa gga acc ttt gaa cta gca aat      785
Asn Ser Leu Pro Ser Gly His Ile Gln Gly Thr Phe Glu Leu Ala Asn
      140              145              150
aaa gaa gaa aac aga gaa aaa aac aga tac ccc aac att ctg ccc aat      833
Lys Glu Glu Asn Arg Glu Lys Asn Arg Tyr Pro Asn Ile Leu Pro Asn
155              160              165              170
gat cat tgc aga gtg att ttg agc caa gtg gat gga atc ccc tgc tct      881
Asp His Cys Arg Val Ile Leu Ser Gln Val Asp Gly Ile Pro Cys Ser
      175              180              185
gac tac att aat gct tcc tac atc gat ggc tac aaa gaa aag aac aaa      929
Asp Tyr Ile Asn Ala Ser Tyr Ile Asp Gly Tyr Lys Glu Lys Asn Lys
      190              195              200
ttc ata gca gct caa ggc cct aag cag gag aca gtg aat gac ttc tgg      977
Phe Ile Ala Ala Gln Gly Pro Lys Gln Glu Thr Val Asn Asp Phe Trp
      205              210              215
aga atg gtc tgg gag caa agg tca gcc acc atc gtc atg ttg acg aac      1025
Arg Met Val Trp Glu Gln Arg Ser Ala Thr Ile Val Met Leu Thr Asn
      220              225              230
ctg aag gag agg aag gag gag aag tgc tac cag tac tgg cca gac cag      1073
Leu Lys Glu Arg Lys Glu Glu Lys Cys Tyr Gln Tyr Trp Pro Asp Gln
235              240              245              250
ggc tgt tgg acc tac ggc aac atc cgg gtg tgt gta gag gac tgc gtg      1121
Gly Cys Trp Thr Tyr Gly Asn Ile Arg Val Cys Val Glu Asp Cys Val

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255	260	265	
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Pro Asp Ser Cys Lys Ala Pro Arg Leu Val Ser Gln Leu His Phe Thr			
285	290	295	
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Ser Trp Pro Asp Phe Gly Val Pro Phe Thr Pro Ile Gly Met Leu Lys			
300	305	310	
ttc ctg aag aaa gtg aag aca ctc aac ccc tca cat gct ggg ccc att			1313
Phe Leu Lys Lys Val Lys Thr Leu Asn Pro Ser His Ala Gly Pro Ile			
315	320	325	330
gtg gtt cac tgt agc gcg ggc gtg ggt cgg act ggc acc ttc att gtg			1361
Val Val His Cys Ser Ala Gly Val Gly Arg Thr Gly Thr Phe Ile Val			
335	340	345	
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Ile Asp Ala Met Met Asp Met Ile His Ser Glu Gln Lys Val Asp Val			
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Phe Glu Phe Val Ser Arg Ile Arg Asn Gln Arg Pro Gln Met Val Gln			
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acg gat gtt cag tat aca ttc atc tac caa gcc tta ctg gaa tac tac			1505
Thr Asp Val Gln Tyr Thr Phe Ile Tyr Gln Ala Leu Leu Glu Tyr Tyr			
380	385	390	
ctc tat ggg gac aca gag ctg gat gtg tcc tcc ctg gag agg cac ctg			1553
Leu Tyr Gly Asp Thr Glu Leu Asp Val Ser Ser Leu Glu Arg His Leu			
395	400	405	410
cag acg ctc cat agc aca gcc acc cat ttt gac aag atc ggg ctg gag			1601

Gln Thr Leu His Ser Thr Ala Thr His Phe Asp Lys Ile Gly Leu Glu	
415	420
425	
gaa gag ttc agg aag ctg acc aac gtg cga atc atg aag gag aac atg	1649
Glu Glu Phe Arg Lys Leu Thr Asn Val Arg Ile Met Lys Glu Asn Met	
430	435
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Arg Thr Gly Asn Leu Pro Ala Asn Met Lys Lys Ala Arg Val Ile Gln	
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caa gag ttc aca gac tat atc aac gca tcc ttc ata gat ggc tac agg	1793
Gln Glu Phe Thr Asp Tyr Ile Asn Ala Ser Phe Ile Asp Gly Tyr Arg	
475	480
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Gln Lys Asp Tyr Phe Met Ala Thr Gln Gly Pro Leu Ala His Thr Gly	
495	500
505	
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Glu Asp Phe Trp Arg Met Val Trp Glu Trp Lys Ser His Thr Ile Val	
510	515
520	
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565	570

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 Lys
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<210> 172

<211> 699

<212> PRT

<213> Mus musculus

<400> 172

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Thr Ser Thr Thr Ala Gly Pro Pro Asp Pro Gly Ala Ser Gln Pro Leu					
	35		40		45
Leu Thr Trp Leu Leu Leu Pro Leu Leu Leu Leu Leu Phe Leu Leu Ala					
	50		55		60
Ala Tyr Phe Phe Arg Phe Arg Lys Gln Arg Lys Ala Val Val Ser Ser					
	65		70		75
Asn Asp Lys Lys Met Pro Asn Gly Ile Leu Glu Glu Gln Glu Gln Gln					
		85		90	
Arg Val Met Leu Leu Ser Arg Ser Pro Ser Gly Pro Lys Lys Phe Phe					
	100		105		110
Pro Ile Pro Val Glu His Leu Glu Glu Glu Ile Arg Val Arg Ser Ala					
	115		120		125
Asp Asp Cys Lys Arg Phe Arg Glu Glu Phe Asn Ser Leu Pro Ser Gly					
	130		135		140
His Ile Gln Gly Thr Phe Glu Leu Ala Asn Lys Glu Glu Asn Arg Glu					
	145		150		155
Lys Asn Arg Tyr Pro Asn Ile Leu Pro Asn Asp His Cys Arg Val Ile					
		165		170	
Leu Ser Gln Val Asp Gly Ile Pro Cys Ser Asp Tyr Ile Asn Ala Ser					
	180		185		190
Tyr Ile Asp Gly Tyr Lys Glu Lys Asn Lys Phe Ile Ala Ala Gln Gly					
	195		200		205
Pro Lys Gln Glu Thr Val Asn Asp Phe Trp Arg Met Val Trp Glu Gln					
	210		215		220
Arg Ser Ala Thr Ile Val Met Leu Thr Asn Leu Lys Glu Arg Lys Glu					
	225		230		235
Glu Lys Cys Tyr Gln Tyr Trp Pro Asp Gln Gly Cys Trp Thr Tyr Gly					
		245		250	
					255

Asn Ile Arg Val Cys Val Glu Asp Cys Val Val Leu Val Asp Tyr Thr
 260 265 270
 Ile Arg Lys Phe Cys Ile His Pro Gln Leu Pro Asp Ser Cys Lys Ala
 275 280 285
 Pro Arg Leu Val Ser Gln Leu His Phe Thr Ser Trp Pro Asp Phe Gly
 290 295 300
 Val Pro Phe Thr Pro Ile Gly Met Leu Lys Phe Leu Lys Lys Val Lys
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 Thr Leu Asn Pro Ser His Ala Gly Pro Ile Val Val His Cys Ser Ala
 325 330 335
 Gly Val Gly Arg Thr Gly Thr Phe Ile Val Ile Asp Ala Met Met Asp
 340 345 350
 Met Ile His Ser Glu Gln Lys Val Asp Val Phe Glu Phe Val Ser Arg
 355 360 365
 Ile Arg Asn Gln Arg Pro Gln Met Val Gln Thr Asp Val Gln Tyr Thr
 370 375 380
 Phe Ile Tyr Gln Ala Leu Leu Glu Tyr Tyr Leu Tyr Gly Asp Thr Glu
 385 390 395 400
 Leu Asp Val Ser Ser Leu Glu Arg His Leu Gln Thr Leu His Ser Thr
 405 410 415
 Ala Thr His Phe Asp Lys Ile Gly Leu Glu Glu Glu Phe Arg Lys Leu
 420 425 430
 Thr Asn Val Arg Ile Met Lys Glu Asn Met Arg Thr Gly Asn Leu Pro
 435 440 445
 Ala Asn Met Lys Lys Ala Arg Val Ile Gln Ile Ile Pro Tyr Asp Phe
 450 455 460
 Asn Arg Val Ile Leu Ser Met Lys Arg Gly Gln Glu Phe Thr Asp Tyr
 465 470 475 480
 Ile Asn Ala Ser Phe Ile Asp Gly Tyr Arg Gln Lys Asp Tyr Phe Met

485	490	495
Ala Thr Gln Gly Pro Leu Ala His Thr Gly Glu Asp Phe Trp Arg Met		
500	505	510
Val Trp Glu Trp Lys Ser His Thr Ile Val Met Leu Thr Glu Val Gln		
515	520	525
Glu Arg Glu Gln Asp Lys Cys Tyr Gln Tyr Trp Pro Thr Glu Gly Ser		
530	535	540
Val Thr His Gly Asp Ile Thr Ile Glu Ile Lys Ser Asp Thr Leu Ser		
545	550	555
Glu Ala Ile Ser Val Arg Asp Phe Leu Val Thr Phe Lys Gln Pro Leu		
565	570	575
Ala Arg Gln Glu Glu Gln Val Arg Met Val Arg Gln Phe His Phe His		
580	585	590
Gly Trp Pro Glu Val Gly Ile Pro Ala Glu Gly Lys Gly Ile Ile Asp		
595	600	605
Leu Ile Ala Ala Val Gln Lys Gln Gln Gln Gln Thr Gly Asn His Pro		
610	615	620
Ile Thr Val His Cys Ser Ala Gly Ala Gly Arg Thr Gly Thr Phe Ile		
625	630	635
Ala Leu Ser Asn Ile Leu Glu Arg Val Lys Ala Glu Gly Leu Leu Asp		
645	650	655
Val Phe Gln Ala Val Lys Ser Leu Arg Leu Gln Arg Pro His Met Val		
660	665	670
Gln Thr Leu Glu Gln Tyr Glu Phe Cys Tyr Lys Val Val Gln Asp Phe		
675	680	685
Ile Asp Ile Phe Ser Asp Tyr Ala Asn Phe Lys		
690	695	

<211> 215

<212> DNA

<213> Mus musculus

<400> 173

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caggcatcat cgcaccacat gccactcttg ttgttgatgt gtgagcttct agaacgtggg 180
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<210> 174

<211> 952

<212> DNA

<213> Mus musculus

<400> 174

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ggcctccctg gaaggcattg cccccgaaga tcaagtcgtg cttctggcag gctcgccgct 180
ggaggatgag gccaccctag gccagtgttg cgtagaggcc ctgaccactc tggaagtagc 240
aggccgcatg ctgggaggta aagttcacgg ttccctggct cgggctggaa aagtgagagg 300
tcagactccc aaggltggcca aacaggaaaa gaagaagaag aagacaggcc gggccaagag 360
gcgaatcgag tacaaccggc gctttgtcaa tgttgtgcca ctttttgga gaagaagggc 420
ccaatgccaa ttccctaagtc gtattgccac catgccatgc taataaagcc actgtgtcca 480
gaaaaaggag aaaaangagg tagggagggg gaganggaga gggagagaaa gaaattaaaa 540
acttgggcgc gaggtttatt cttttggttg gggttatitt cgttgccatg gcggcggtta 600
taaatgctgg ctggaaacc ccgggggttac aaatttagtc gntttgagaa tccccctttg 660
gcagttggtg ataggaagac ccggacggtt ggcgttccaa aaattcccgt tgaatgcgaa 720
tgcgccccct ttggcgatt agcgggggnt ttgtgttagg gagctgttag atgtgaacct 780

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gcgggccttt cgtctccttt ttcagatcgg ggggcgtgag gtcgcgcctg ggagaigtaa 840
gagggcgtgt ttggccgca aaatgggtgt gcgccgcccg agatgtcttt ctggcgggia 900
tttcaccaca tttgttttg gnaatacaaa aattgagcgg ggtgttcgct ga 952

<210> 175

<211> 479

<212> DNA

<213> Mus musculus

<400> 175

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cagcgggagg aatgcgcctc tgcacgctcc cccgtcagaa cattacacca tcgtgttcaa 180
tacctttgtg ctgatgcagc tcttcaatga aataaacgcc cggaaaattc acggggaaag 240
aaatgtgttt gaaggaaict tcaataacgc catcttctgc accattgtcc tgggcacctt 300
tgtgggtcag ataataattg tgcagtttgg cgggaagcct ttcagctgct cagaactttc 360
aatagagcaa tggctgtggt cgatattcct gggaatgggg accttactct ggggccagct 420
tatttcaacc cattccaacc agccgcttaa agtttccaaa aggtagcttg gtcattgaa 479

<210> 176

<211> 550

<212> DNA

<213> Mus musculus

<400> 176

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gtgcaaggcc taggcgagaa tgttacaatt gaatctgtgg ctgattactt caagcagatt 120
ggaattatla agacaaacaa gaaaactgga cagcctatga ttaatttgta cacagacagg 180
gaaactggca agttgaaggg tgaggcaaca gtttcatttg atgaccacc tctgtctaaa 240

gcagctatcg actggtttga tggtaaagaa ttctctggga atcctattaa agtttcattt 300
gctacccgcc gagctgactt caatcggggg ggtggaaatg gtcgcggagg ccgagggcga 360
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ggattcccag tggagggtgt ggagggtggag gacagcaacg agctggagac tggaagtgtc 480
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cacctaagcc 550

<210> 177

<211> 492

<212> DNA

<213> Mus musculus

<400> 177

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gaaagatttc atcatcttcg aggctgcacc ccaagagaca cgtggcatcc cctccaaaaa 180
gccagtggcc gactatttcc tgtgactcct tggccccagc cccctcggcc cttggaccac 240
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ccagggtgcg gacttgctct ggagagggtg agccttggct cctggcttcc tctcctttct 360
cccacttgat ccatgaagtt ttcagtcatt tttttttct ttttccctt ttttccctt 420
cttttttctt ttgtttttg tttttagata aaacatttt agaaaaaaag aaaaaaatc 480
taataaaaga ag 492

<210> 178

<211> 456

<212> DNA

<213> Mus musculus

<400> 178

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 ctcttctacc ctgcgggctg cagccagcaa gctggagcag gggaagcgga cgagtgcag 180
 tccagcagcc aagcgtcttc ggatggacac gggccccag agcctgtctg ggaagtccac 240
 acccagcagc ggtgatgtcc aggtgacaga ggacgctgtg cccgctacct gacccgcaag 300
 cccatgacca caaaggacct gctgaagaag ttccagacca agaagacagg gctgagcagc 360
 gagcagacag taaatgtgct ggcgagatc ctcaagcgcc tcaacctga gcgcaagatg 420
 attggtgata agatgcacit ciccctcaaa gagtga 456

<210> 179

<211> 2283

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (362).. (1321)

<400> 179

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 taatcacaac aatcgcggcg gcccgaggag gagagtctcc ctgttttttc atcccaattg 180
 cacttcgccc gtctcgagct ccgcttcccc ccaactattc tccgccagat ctccgcgcag 240
 ggccgtgcac gccgaggccc ccgcccgcgg cccctgcac ccggcccccg agcgcggccc 300
 ccacagtccc ggccggggcg agggttggcg gccgcccgcg ggccggccgc ccagcgcccg 360
 c atg tat aac atg atg gag acg gag ctg aag ccg ccg ggc ccg cag caa 409
 Met Tyr Asn Met Met Glu Thr Glu Leu Lys Pro Pro Gly Pro Gln Gln
 1 5 10 15
 gct tgc ggg ggc ggc ggc gga gga ggc aac gcc acg gcg gcg gcg acc 457

Ala Ser Gly Gly Gly Gly Gly Gly Gly Asn Ala Thr Ala Ala Ala Thr	
20 25 30	
ggc ggc aac cag aag aac agc ccg gac cgc gtc aag agg ccc atg aac	505
Gly Gly Asn Gln Lys Asn Ser Pro Asp Arg Val Lys Arg Pro Met Asn	
35 40 45	
gcc ttc atg gta tgg tcc cgg ggg cag cgg cgt aag atg gcc cag gag	553
Ala Phe Met Val Trp Ser Arg Gly Gln Arg Arg Lys Met Ala Gln Glu	
50 55 60	
aac ccc aag atg cac aac tcg gag atc agc aag cgc ctg ggc gcg gag	601
Asn Pro Lys Met His Asn Ser Glu Ile Ser Lys Arg Leu Gly Ala Glu	
65 70 75 80	
tgg aaa ctt ttg tcc gag acc gag aag cgg ccg ttc atc gac gag gcc	649
Trp Lys Leu Leu Ser Glu Thr Glu Lys Arg Pro Phe Ile Asp Glu Ala	
85 90 95	
aag cgg ctg cgc gct ctg cac atg aag gag cac ccg gat tat aaa tac	697
Lys Arg Leu Arg Ala Leu His Met Lys Glu His Pro Asp Tyr Lys Tyr	
100 105 110	
cgg ccg cgg cgg aaa acc aag acg ctc atg aag aag gat aag tac acg	745
Arg Pro Arg Arg Lys Thr Lys Thr Leu Met Lys Lys Asp Lys Tyr Thr	
115 120 125	
ctt ccc gga ggc ttg ctg gcc ccc ggc ggg aac agc atg gcg agc ggg	793
Leu Pro Gly Gly Leu Leu Ala Pro Gly Gly Asn Ser Met Ala Ser Gly	
130 135 140	
gtt ggg gtg ggc gcc ggc ctg ggt ggc ggg ctg aac cag cgc atg gac	841
Val Gly Val Gly Ala Gly Leu Gly Gly Gly Leu Asn Gln Arg Met Asp	
145 150 155 160	
agc tac gcg cac atg aac ggc tgg agc aac ggc agc tac agc atg atg	889
Ser Tyr Ala His Met Asn Gly Trp Ser Asn Gly Ser Tyr Ser Met Met	
165 170 175	

cag gag cag ctg ggc tac ccg cag cac ccg ggc ctc aac gct cac ggc 937
 Gln Glu Gln Leu Gly Tyr Pro Gln His Pro Gly Leu Asn Ala His Gly
 180 185 190
 gcg gca cag atg caa ccg atg cac cgc tac gtc gtc agc gcc ctg cag 985
 Ala Ala Gln Met Gln Pro Met His Arg Tyr Val Val Ser Ala Leu Gln
 195 200 205
 tac aac tcc atg acc agc tcg cag acc tac atg aac ggc tcg ccc acc 1033
 Tyr Asn Ser Met Thr Ser Ser Gln Thr Tyr Met Asn Gly Ser Pro Thr
 210 215 220
 tac agc atg tcc tac tcg cag cag ggc acc ccc ggt atg gcg ctg ggc 1081
 Tyr Ser Met Ser Tyr Ser Gln Gln Gly Thr Pro Gly Met Ala Leu Gly
 225 230 235 240
 tcc atg ggc tct gtg gtc aag tcc gag gcc agc tcc agc ccc ccc gtg 1129
 Ser Met Gly Ser Val Val Lys Ser Glu Ala Ser Ser Ser Pro Pro Val
 245 250 255
 gtt acc tct tcc tcc cac tcc agg gcg ccc tgc cag gcc ggg gac ctc 1177
 Val Thr Ser Ser Ser His Ser Arg Ala Pro Cys Gln Ala Gly Asp Leu
 260 265 270
 cgg gac atg atc agc atg tac ctc ccc ggc gcc gag gtg ccg gag ccc 1225
 Arg Asp Met Ile Ser Met Tyr Leu Pro Gly Ala Glu Val Pro Glu Pro
 275 280 285
 gct gcg ccc agt aga ctg cac atg gcc cag cac tac cag agc ggc ccg 1273
 Ala Ala Pro Ser Arg Leu His Met Ala Gln His Tyr Gln Ser Gly Pro
 290 295 300
 gtg ccc ggc acg gcc aaa tac ggc aca ctg ccc ctg tcg cac atg tga 1321
 Val Pro Gly Thr Ala Lys Tyr Gly Thr Leu Pro Leu Ser His Met
 305 310 315 320
 gggctggact gcgaactgga gaaggggaga gattttcaaa gagatacaag agaattggga 1381
 ggggtgcaaa aagaggagag taggaaaaat ctgataatgc ycaaaaggaa aaaaaccacc 1441

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<210> 180

<211> 319

<212> PRT

<213> Mus musculus

<400> 180

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			20						25					30	
Gly	Gly	Asn	Gln	Lys	Asn	Ser	Pro	Asp	Arg	Val	Lys	Arg	Pro	Met	Asn
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Ala	Phe	Met	Val	Trp	Ser	Arg	Gly	Gln	Arg	Arg	Lys	Met	Ala	Gln	Glu

50	55	60
Asn Pro Lys Met His Asn Ser Glu Ile Ser Lys Arg Leu Gly Ala Glu		
65	70	75
Trp Lys Leu Leu Ser Glu Thr Glu Lys Arg Pro Phe Ile Asp Glu Ala		80
	85	90
Lys Arg Leu Arg Ala Leu His Met Lys Glu His Pro Asp Tyr Lys Tyr		95
100	105	110
Arg Pro Arg Arg Lys Thr Lys Thr Leu Met Lys Lys Asp Lys Tyr Thr		
115	120	125
Leu Pro Gly Gly Leu Leu Ala Pro Gly Gly Asn Ser Met Ala Ser Gly		
130	135	140
Val Gly Val Gly Ala Gly Leu Gly Gly Gly Leu Asn Gln Arg Met Asp		
145	150	155
Ser Tyr Ala His Met Asn Gly Trp Ser Asn Gly Ser Tyr Ser Met Met		160
	165	170
Gln Glu Gln Leu Gly Tyr Pro Gln His Pro Gly Leu Asn Ala His Gly		175
180	185	190
Ala Ala Gln Met Gln Pro Met His Arg Tyr Val Val Ser Ala Leu Gln		
195	200	205
Tyr Asn Ser Met Thr Ser Ser Gln Thr Tyr Met Asn Gly Ser Pro Thr		
210	215	220
Tyr Ser Met Ser Tyr Ser Gln Gln Gly Thr Pro Gly Met Ala Leu Gly		
225	230	235
Ser Met Gly Ser Val Val Lys Ser Glu Ala Ser Ser Ser Pro Pro Val		240
	245	250
Val Thr Ser Ser Ser His Ser Arg Ala Pro Cys Gln Ala Gly Asp Leu		255
260	265	270
Arg Asp Met Ile Ser Met Tyr Leu Pro Gly Ala Glu Val Pro Glu Pro		
275	280	285

Ala Ala Pro Ser Arg Leu His Met Ala Gln His Tyr Gln Ser Gly Pro

290

295

300

Val Pro Gly Thr Ala Lys Tyr Gly Thr Leu Pro Leu Ser His Met

305

310

315

<210> 181

<211> 1387

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (118).. (1266)

<400> 181

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atg gga gca ttt tta gac aag cca aag atg gag aag cat aat gcc cag 165

Met Gly Ala Phe Leu Asp Lys Pro Lys Met Glu Lys His Asn Ala Gln

1

5

10

15

ggg cag ggg aat ggg tta cga tac ggc cta agc agc atg caa ggt tgg 213

Gly Gln Gly Asn Gly Leu Arg Tyr Gly Leu Ser Ser Met Gln Gly Trp

20

25

30

cga gtt gaa atg gag gac gca cac acg gct gtg atc ggt ttg cca agt 261

Arg Val Glu Met Glu Asp Ala His Thr Ala Val Ile Gly Leu Pro Ser

35

40

45

gga ctt gag aca tgg tca ttc ttt gct gta tat gat ggg cat gct ggt 309

Gly Leu Glu Thr Trp Ser Phe Phe Ala Val Tyr Asp Gly His Ala Gly

50

55

60

tct cag gtt gcc aaa tac tgc tgt gag cac ttg tta gat cac atc acc 357
Ser Gln Val Ala Lys Tyr Cys Cys Glu His Leu Leu Asp His Ile Thr
65 70 75 80
aat aac cag gat ttc aga gga tct gca gga gca cct tct gtg gag aac 405
Asn Asn Gln Asp Phe Arg Gly Ser Ala Gly Ala Pro Ser Val Glu Asn
85 90 95
gta aag aat gga atc aga aca ggg ttt ctg gag att gat gaa cac atg 453
Val Lys Asn Gly Ile Arg Thr Gly Phe Leu Glu Ile Asp Glu His Met
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aga gtt atg tca gag aag aaa cat ggt gca gat aga agc ggg tca aca 501
Arg Val Met Ser Glu Lys Lys His Gly Ala Asp Arg Ser Gly Ser Thr
115 120 125
gct gtg ggc gtc tta atc tct ccc caa cat act tat ttc att aac tgt 549
Ala Val Gly Val Leu Ile Ser Pro Gln His Thr Tyr Phe Ile Asn Cys
130 135 140
gga gac tcg aga ggt tta ctt tgt agg aat aga aaa gtt cac ttc ttc 597
Gly Asp Ser Arg Gly Leu Leu Cys Arg Asn Arg Lys Val His Phe Phe
145 150 155 160
aca caa gac cat aaa cca agt aac ccg ctg gaa aaa gaa cga att cag 645
Thr Gln Asp His Lys Pro Ser Asn Pro Leu Glu Lys Glu Arg Ile Gln
165 170 175
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Asn Ala Gly Gly Ser Val Met Ile Gln Arg Val Asn Gly Ser Leu Ala
180 185 190
gta tcg agg gcc ctt ggg gat ttc gat tac aaa tgt gtc cat gga aaa 741
Val Ser Arg Ala Leu Gly Asp Phe Asp Tyr Lys Cys Val His Gly Lys
195 200 205
ggg ccc aca gag cag ctt gtc tcc cca gag ccc gaa gtc cat gat att 789
Gly Pro Thr Glu Gln Leu Val Ser Pro Glu Pro Glu Val His Asp Ile

210	215	220	
gaa agg tct gaa gaa gat gac cag ttc atc atc ctt gca tgc gat ggc			837
Glu Arg Ser Glu Glu Asp Asp Gln Phe Ile Ile Leu Ala Cys Asp Gly			
225	230	235	240
atc tgg gac gtc atg ggg aac gaa gag ctc tgt gac ttt gtg aga tcc			885
Ile Trp Asp Val Met Gly Asn Glu Glu Leu Cys Asp Phe Val Arg Ser			
245	250	255	
aga ctt gaa gtc act gat gac ctt gag aaa gtt tgc aat gaa gta gtc			933
Arg Leu Glu Val Thr Asp Asp Leu Glu Lys Val Cys Asn Glu Val Val			
260	265	270	
gac acc tgc ttg tat aag gga agt cga gac aac atg agt gtg att ttg			981
Asp Thr Cys Leu Tyr Lys Gly Ser Arg Asp Asn Met Ser Val Ile Leu			
275	280	285	
atc tgt ttt cca agt gca ccc aaa gtc tgc gca gag gcg gtg aag aag			1029
Ile Cys Phe Pro Ser Ala Pro Lys Val Ser Ala Glu Ala Val Lys Lys			
290	295	300	
gag gcg gag ctg gac aag tac ctg gag agc aga gta gaa gaa atc ata			1077
Glu Ala Glu Leu Asp Lys Tyr Leu Glu Ser Arg Val Glu Glu Ile Ile			
305	310	315	320
aag aag cag gtg gaa ggc gtc cct gac tta gtc cac gtg atg cgc acg			1125
Lys Lys Gln Val Glu Gly Val Pro Asp Leu Val His Val Met Arg Thr			
325	330	335	
tta gcc agt gag aac atc ccc agc ctc cca cca ggg ggt gaa ttg gca			1173
Leu Ala Ser Glu Asn Ile Pro Ser Leu Pro Pro Gly Gly Glu Leu Ala			
340	345	350	
agc aag cgg aat gta att gaa gcc gtt tac aat aga ctg aac cct tac			1221
Ser Lys Arg Asn Val Ile Glu Ala Val Tyr Asn Arg Leu Asn Pro Tyr			
355	360	365	
aaa aat gac gac act gat tct gcg tca acc gat gat atg tgg taa			1266

Lys Asn Asp Asp Thr Asp Ser Ala Ser Thr Asp Asp Met Trp

370

375

380

agccgctcac ccagccgtgg actcaccttc gcctgcaaag gggaagccag ctcaccttg 1326

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g

1387

<210> 182

<211> 382

<212> PRT

<213> Mus musculus

<400> 182

Met Gly Ala Phe Leu Asp Lys Pro Lys Met Glu Lys His Asn Ala Gln

1

5

10

15

Gly Gln Gly Asn Gly Leu Arg Tyr Gly Leu Ser Ser Met Gln Gly Trp

20

25

30

Arg Val Glu Met Glu Asp Ala His Thr Ala Val Ile Gly Leu Pro Ser

35

40

45

Gly Leu Glu Thr Trp Ser Phe Phe Ala Val Tyr Asp Gly His Ala Gly

50

55

60

Ser Gln Val Ala Lys Tyr Cys Cys Glu His Leu Leu Asp His Ile Thr

65

70

75

80

Asn Asn Gln Asp Phe Arg Gly Ser Ala Gly Ala Pro Ser Val Glu Asn

85

90

95

Val Lys Asn Gly Ile Arg Thr Gly Phe Leu Glu Ile Asp Glu His Met

100

105

110

Arg Val Met Ser Glu Lys Lys His Gly Ala Asp Arg Ser Gly Ser Thr

115

120

125

Ala Val Gly Val Leu Ile Ser Pro Gln His Thr Tyr Phe Ile Asn Cys

130	135	140	
Gly Asp Ser Arg Gly Leu Leu Cys Arg Asn Arg Lys Val His Phe Phe			
145	150	155	160
Thr Gln Asp His Lys Pro Ser Asn Pro Leu Glu Lys Glu Arg Ile Gln			
	165	170	175
Asn Ala Gly Gly Ser Val Met Ile Gln Arg Val Asn Gly Ser Leu Ala			
	180	185	190
Val Ser Arg Ala Leu Gly Asp Phe Asp Tyr Lys Cys Val His Gly Lys			
	195	200	205
Gly Pro Thr Glu Gln Leu Val Ser Pro Glu Pro Glu Val His Asp Ile			
	210	215	220
Glu Arg Ser Glu Glu Asp Asp Gln Phe Ile Ile Leu Ala Cys Asp Gly			
225	230	235	240
Ile Trp Asp Val Met Gly Asn Glu Glu Leu Cys Asp Phe Val Arg Ser			
	245	250	255
Arg Leu Glu Val Thr Asp Asp Leu Glu Lys Val Cys Asn Glu Val Val			
	260	265	270
Asp Thr Cys Leu Tyr Lys Gly Ser Arg Asp Asn Met Ser Val Ile Leu			
	275	280	285
Ile Cys Phe Pro Ser Ala Pro Lys Val Ser Ala Glu Ala Val Lys Lys			
	290	295	300
Glu Ala Glu Leu Asp Lys Tyr Leu Glu Ser Arg Val Glu Glu Ile Ile			
305	310	315	320
Lys Lys Gln Val Glu Gly Val Pro Asp Leu Val His Val Met Arg Thr			
	325	330	335
Leu Ala Ser Glu Asn Ile Pro Ser Leu Pro Pro Gly Gly Glu Leu Ala			
	340	345	350
Ser Lys Arg Asn Val Ile Glu Ala Val Tyr Asn Arg Leu Asn Pro Tyr			
	355	360	365

Lys Asn Asp Asp Thr Asp Ser Ala Ser Thr Asp Asp Met Trp

370

375

380

<210> 183

<211> 1454

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (282).. (1385)

<400> 183

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cagaaatcgc caactcagca attaagagcc tttccigtgg aagctcttgc atgaggtagt 120
agaagccttt attctcttct ccaagtaagg cattagctgg caatcggaca tcttcaaaga 180
atagttgtgc tgtgtcctga gctttcattc ccattttatg cagcttcgg gccttgataa 240
atcctttcat tccgttttcc accaaaaaga gactgtttgc c atg gag gcg aac ggg 296

Met Glu Ala Asn Gly

1

5

ttc gga ctc cag aat ttc ccg gag ctg aag aat gac acg ttc ctg aga 344

Phe Gly Leu Gln Asn Phe Pro Glu Leu Lys Asn Asp Thr Phe Leu Arg

10

15

20

gca gcc tgg gga gag gaa aca gac tat act ccc gtt tgg tgc atg aga 392

Ala Ala Trp Gly Glu Glu Thr Asp Tyr Thr Pro Val Trp Cys Met Arg

25

30

35

cag gca ggc cgc tac tta cca gag ttt agg gaa acc agg gct gcc cag 440

Gln Ala Gly Arg Tyr Leu Pro Glu Phe Arg Glu Thr Arg Ala Ala Gln

40

45

50

gac ttc ttc agc acc tgc cga tct ccc gag gct tgc tgt gaa ctg act 488
 Asp Phe Phe Ser Thr Cys Arg Ser Pro Glu Ala Cys Cys Glu Leu Thr
 55 60 65
 cta cag cca cta cga agg ttt cct ctg gat gct gcc ata att ttc tct 536
 Leu Gln Pro Leu Arg Arg Phe Pro Leu Asp Ala Ala Ile Ile Phe Ser
 70 75 80 85
 gac atc ctt gtt gta ccc cag gca ttg ggc ata gag gtg acc atg gta 584
 Asp Ile Leu Val Val Pro Gln Ala Leu Gly Ile Glu Val Thr Met Val
 90 95 100
 cct ggc aaa gga ccc agc ttt cca gag cca tta aga gaa gag cgg gac 632
 Pro Gly Lys Gly Pro Ser Phe Pro Glu Pro Leu Arg Glu Glu Arg Asp
 105 110 115
 tta gag cgt cta cgg gat cca gca gca gcg gct tca gag tta ggc tat 680
 Leu Glu Arg Leu Arg Asp Pro Ala Ala Ala Ala Ser Glu Leu Gly Tyr
 120 125 130
 gtg ttc caa gcc atc acc ctt act cga caa cgg ctg gcc gga cgt gtg 728
 Val Phe Gln Ala Ile Thr Leu Thr Arg Gln Arg Leu Ala Gly Arg Val
 135 140 145
 cca cta att ggc ttt gct ggt gct ccg tgg acc cta atg aca tac atg 776
 Pro Leu Ile Gly Phe Ala Gly Ala Pro Trp Thr Leu Met Thr Tyr Met
 150 155 160 165
 gtt gaa ggc ggc agt tca agc acc atg gct cag gcc aaa cga tgg ctc 824
 Val Glu Gly Gly Ser Ser Ser Thr Met Ala Gln Ala Lys Arg Trp Leu
 170 175 180
 tac caa agg cca cag gcc agt cac aag ctg ctt ggc ata ctc act gat 872
 Tyr Gln Arg Pro Gln Ala Ser His Lys Leu Leu Gly Ile Leu Thr Asp
 185 190 195
 gtt ctg gtc cca tac cta ata gga caa gtg gct gct ggt gct cag gca 920
 Val Leu Val Pro Tyr Leu Ile Gly Gln Val Ala Ala Gly Ala Gln Ala

200	205	210	
ttg cag ctc ttt gag tcc cac gca gga cat ctt ggc acc gag ctc ttc			968
Leu Gln Leu Phe Glu Ser His Ala Gly His Leu Gly Thr Glu Leu Phe			
215	220	225	
agc aag ttt gca ctg ccc tac att cgt gat gtg gcc aag cga gtg aag			1016
Ser Lys Phe Ala Leu Pro Tyr Ile Arg Asp Val Ala Lys Arg Val Lys			
230	235	240	245
gct ggg ttg cag aag gca ggc ctg gca cca gtg ccc atg atc atc ttt			1064
Ala Gly Leu Gln Lys Ala Gly Leu Ala Pro Val Pro Met Ile Ile Phe			
250	255	260	
gct aag gat gga cat ttt gcc ctg gaa gag ctg gcc cag gct ggc tat			1112
Ala Lys Asp Gly His Phe Ala Leu Glu Glu Leu Ala Gln Ala Gly Tyr			
265	270	275	
gag gta gtt gga ctt gac tgg aca gtg gct cca aag aaa gcc cgg gaa			1160
Glu Val Val Gly Leu Asp Trp Thr Val Ala Pro Lys Lys Ala Arg Glu			
280	285	290	
cgt gtc ggg aag gca gtg acc ctg cag ggg aac ctg gat ccc tgt gcc			1208
Arg Val Gly Lys Ala Val Thr Leu Gln Gly Asn Leu Asp Pro Cys Ala			
295	300	305	
ttg tat gca tct gag gaa gag atc ggt cgg ctg gtg cag caa atg ctg			1256
Leu Tyr Ala Ser Glu Glu Glu Ile Gly Arg Leu Val Gln Gln Met Leu			
310	315	320	325
gat gac ttt ggg cct caa cgc tca att gcc aac cta ggg cat ggg ctt			1304
Asp Asp Phe Gly Pro Gln Arg Ser Ile Ala Asn Leu Gly His Gly Leu			
330	335	340	
tac cct gac atg gac cca gaa cgt gta gga gcc ttt gtg gat gct gta			1352
Tyr Pro Asp Met Asp Pro Glu Arg Val Gly Ala Phe Val Asp Ala Val			
345	350	355	
cac aaa cat tca cgc ctg ctt cga cag aat tga gtacatgcct ttctgctcaa			1405

His Lys His Ser Arg Leu Leu Arg Gln Asn

360

365

gtgccaccaa cagagattgt ticcaggaga ataaaacttc cagagttgg

1454

<210> 184

<211> 367

<212> PRT

<213> Mus musculus

<400> 184

Met Glu Ala Asn Gly Phe Gly Leu Gln Asn Phe Pro Glu Leu Lys Asn

1

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10

15

Asp Thr Phe Leu Arg Ala Ala Trp Gly Glu Glu Thr Asp Tyr Thr Pro

20

25

30

Val Trp Cys Met Arg Gln Ala Gly Arg Tyr Leu Pro Glu Phe Arg Glu

35

40

45

Thr Arg Ala Ala Gln Asp Phe Phe Ser Thr Cys Arg Ser Pro Glu Ala

50

55

60

Cys Cys Glu Leu Thr Leu Gln Pro Leu Arg Arg Phe Pro Leu Asp Ala

65

70

75

80

Ala Ile Ile Phe Ser Asp Ile Leu Val Val Pro Gln Ala Leu Gly Ile

85

90

95

Glu Val Thr Met Val Pro Gly Lys Gly Pro Ser Phe Pro Glu Pro Leu

100

105

110

Arg Glu Glu Arg Asp Leu Glu Arg Leu Arg Asp Pro Ala Ala Ala Ala

115

120

125

Ser Glu Leu Gly Tyr Val Phe Gln Ala Ile Thr Leu Thr Arg Gln Arg

130

135

140

Leu Ala Gly Arg Val Pro Leu Ile Gly Phe Ala Gly Ala Pro Trp Thr

145	150	155	160
Leu Met Thr Tyr Met Val Glu Gly Gly Ser Ser Ser Thr Met Ala Gln			
	165	170	175
Ala Lys Arg Trp Leu Tyr Gln Arg Pro Gln Ala Ser His Lys Leu Leu			
	180	185	190
Gly Ile Leu Thr Asp Val Leu Val Pro Tyr Leu Ile Gly Gln Val Ala			
	195	200	205
Ala Gly Ala Gln Ala Leu Gln Leu Phe Glu Ser His Ala Gly His Leu			
	210	215	220
Gly Thr Glu Leu Phe Ser Lys Phe Ala Leu Pro Tyr Ile Arg Asp Val			
225	230	235	240
Ala Lys Arg Val Lys Ala Gly Leu Gln Lys Ala Gly Leu Ala Pro Val			
	245	250	255
Pro Met Ile Ile Phe Ala Lys Asp Gly His Phe Ala Leu Glu Glu Leu			
	260	265	270
Ala Gln Ala Gly Tyr Glu Val Val Gly Leu Asp Trp Thr Val Ala Pro			
	275	280	285
Lys Lys Ala Arg Glu Arg Val Gly Lys Ala Val Thr Leu Gln Gly Asn			
	290	295	300
Leu Asp Pro Cys Ala Leu Tyr Ala Ser Glu Glu Glu Ile Gly Arg Leu			
305	310	315	320
Val Gln Gln Met Leu Asp Asp Phe Gly Pro Gln Arg Ser Ile Ala Asn			
	325	330	335
Leu Gly His Gly Leu Tyr Pro Asp Met Asp Pro Glu Arg Val Gly Ala			
	340	345	350
Phe Val Asp Ala Val His Lys His Ser Arg Leu Leu Arg Gln Asn			
	355	360	365

<210> 185

<211> 1958

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (204).. (1532)

<400> 185

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 gtgtccctgc ttcactcccc agttggtctc cagactgaaa acagcagagc ggctaccaga 180
 cctcacagg agcaagctgt aac atg caa tcg ccc gca agc cgg tgc gga cgc 233

Met Gln Ser Pro Ala Ser Arg Cys Gly Arg

1

5

10

gcc ttg gtg gcg ctg ctg ctg gcc tgt ggc ttc ttg ggg gta tgg gga 281
 Ala Leu Val Ala Leu Leu Leu Ala Cys Gly Phe Leu Gly Val Trp Gly

15

20

25

gag aaa aga gga ttc cca cct gcc caa gcc acg ctg tca ctt ctc ggg 329
 Glu Lys Arg Gly Phe Pro Pro Ala Gln Ala Thr Leu Ser Leu Leu Gly

30

35

40

act aaa gag gta atg acg cca ccc act aag acc tcc tgg acc aga ggt 377
 Thr Lys Glu Val Met Thr Pro Pro Thr Lys Thr Ser Trp Thr Arg Gly

45

50

55

tcc aac tcc agt ctg atg cgt tcc tcc gca cct gcg gag gtg acc aaa 425
 Ser Asn Ser Ser Leu Met Arg Ser Ser Ala Pro Ala Glu Val Thr Lys

60

65

70

gga ggg agg ggg gct gga gtc ccg cca aga tcc ttc cct cct ccg tgc 473
 Gly Gly Arg Gly Ala Gly Val Pro Pro Arg Ser Phe Pro Pro Pro Cys

75	80	85	90	
caa cga aat att gag atc agc aag act ttt aaa tac atc aac acg att	521			
Gln Arg Asn Ile Glu Ile Ser Lys Thr Phe Lys Tyr Ile Asn Thr Ile				
	95	100	105	
gtg tgc tgc ctc gig ttc gtg cta ggc atc atc ggg aac tcc acg ctg	569			
Val Ser Cys Leu Val Phe Val Leu Gly Ile Ile Gly Asn Ser Thr Leu				
	110	115	120	
cta aga atc atc tac aag aac aag tgc atg cgc aat ggt ccc aat atc	617			
Leu Arg Ile Ile Tyr Lys Asn Lys Cys Met Arg Asn Gly Pro Asn Ile				
	125	130	135	
t'tg atc gcc agt ctg gct ctg gga gac cta ctg cac atc atc ata gac	665			
Leu Ile Ala Ser Leu Ala Leu Gly Asp Leu Leu His Ile Ile Ile Asp				
	140	145	150	
ata ccc att aac acc tac aag ttg ctc gca gag gac tgg cca ttt gga	713			
Ile Pro Ile Asn Thr Tyr Lys Leu Leu Ala Glu Asp Trp Pro Phe Gly				
155	160	165	170	
gct gag atg tgt aag ctg gtg ccc ttc ata cag aag gct tct gtg gga	761			
Ala Glu Met Cys Lys Leu Val Pro Phe Ile Gln Lys Ala Ser Val Gly				
	175	180	185	
atc aca gtg ctg agt ctt tgt gct cta agt att gac aga tat cga gct	809			
Ile Thr Val Leu Ser Leu Cys Ala Leu Ser Ile Asp Arg Tyr Arg Ala				
	190	195	200	
gtt gct tct tgg agt cga att aaa gga att ggg gtt cca aaa tgg aca	857			
Val Ala Ser Trp Ser Arg Ile Lys Gly Ile Gly Val Pro Lys Trp Thr				
	205	210	215	
gca gta gaa att gtt tta att tgg gtg gtc tct gtg gtt ctg gct gtc	905			
Ala Val Glu Ile Val Leu Ile Trp Val Val Ser Val Val Leu Ala Val				
	220	225	230	
ccc gaa gcc ata ggt ttt gat atg att acg tgc gac tac aaa gga aag	953			

Pro Glu Ala Ile Gly Phe Asp Met Ile Thr Ser Asp Tyr Lys Gly Lys
 235 240 245 250
 ccc cta agg gtc tgc atg ctt aat ccc ttt cag aaa aca gcc ttc atg 1001
 Pro Leu Arg Val Cys Met Leu Asn Pro Phe Gln Lys Thr Ala Phe Met
 255 260 265
 cag ttt tac aag aca gcc aaa gat tgg tgg ctg ttc agt ttc tac ttc 1049
 Gln Phe Tyr Lys Thr Ala Lys Asp Trp Trp Leu Phe Ser Phe Tyr Phe
 270 275 280
 tgc ttg ccg cta gcc atc act gca gtc ttt tat acc ctg atg acc tgc 1097
 Cys Leu Pro Leu Ala Ile Thr Ala Val Phe Tyr Thr Leu Met Thr Cys
 285 290 295
 gaa atg ctc agg aag aag agc ggt atg cag att gct ttg aat gat cac 1145
 Glu Met Leu Arg Lys Lys Ser Gly Met Gln Ile Ala Leu Asn Asp His
 300 305 310
 tta aag cag aga cga gaa gtg gcc aag aca gtc ttc tgc ctg gtc ctc 1193
 Leu Lys Gln Arg Arg Glu Val Ala Lys Thr Val Phe Cys Leu Val Leu
 315 320 325 330
 gtg ttt gct ctc tgt tgg ctt ccc ctt cac ctc agc cgg atc ctg aag 1241
 Val Phe Ala Leu Cys Trp Leu Pro Leu His Leu Ser Arg Ile Leu Lys
 335 340 345
 ctc acc ctg tat gac cag agc aat cca cac agg tgt gag ctt ctg agc 1289
 Leu Thr Leu Tyr Asp Gln Ser Asn Pro His Arg Cys Glu Leu Leu Ser
 350 355 360
 ttt ttg ttg gtt ttg gac tac att ggt atc aac atg gct tct ttg aac 1337
 Phe Leu Leu Val Leu Asp Tyr Ile Gly Ile Asn Met Ala Ser Leu Asn
 365 370 375
 tcc tgc atc aat cca atc gct ctg tat ttg gtg agc aaa aga ttc aaa 1385
 Ser Cys Ile Asn Pro Ile Ala Leu Tyr Leu Val Ser Lys Arg Phe Lys
 380 385 390

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aac tgc ttt aag tca tgt ttg tgc tgc tgg tgc caa acg ttt gag gaa 1433
Asn Cys Phe Lys Ser Cys Leu Cys Cys Trp Cys Gln Thr Phe Glu Glu
395          400          405          410
aag cag tcc ttg gag gag aag cag tcc tgc ctg aag ttc aaa gcc aac 1481
Lys Gln Ser Leu Glu Glu Lys Gln Ser Cys Leu Lys Phe Lys Ala Asn
          415          420          425
gat cac gga tat gac aac ttc cgg tcc agc aat aaa tac agc tgc tct 1529
Asp His Gly Tyr Asp Asn Phe Arg Ser Ser Asn Lys Tyr Ser Ser Ser
          430          435          440
tga aggcaagaac actcgccgaa tctcactgtc ctcatgtgtg acagatacca 1582
ttaaaacaaa atgaaaccgt tgccaaatca aaatggaaaa aaccatgcta gcagaaaggt 1642
gtgcgcgcgt gtgagaggga ttatttttaa ctgttctgac gctcaacacc ggatatattc 1702
acgggctgtt tacaacctaa gaaagctgtg ggaaggaatg aagccctcct ccgtggggaa 1762
gcacttagat tcttagtcag cacttcagca gagctcttaa aagcccttag tgcgttcaca 1822
tgccacttac gtttaaaaaa acgagaactt cactgaagtt ctgttcagga gtttattatc 1882
cagtcctatg aatctggatt caagaaagca tgacattgca aaacaattct taataaaaaa 1942
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<210> 186

<211> 442

<212> PRT

<213> Mus musculus

<400> 186

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          20          25          30
Pro Ala Gln Ala Thr Leu Ser Leu Leu Gly Thr Lys Glu Val Met Thr

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35	40	45
Pro Pro Thr Lys Thr Ser Trp Thr Arg Gly Ser Asn Ser Ser Leu Met		
50	55	60
Arg Ser Ser Ala Pro Ala Glu Val Thr Lys Gly Gly Arg Gly Ala Gly		
65	70	75
Val Pro Pro Arg Ser Phe Pro Pro Pro Cys Gln Arg Asn Ile Glu Ile		
85	90	95
Ser Lys Thr Phe Lys Tyr Ile Asn Thr Ile Val Ser Cys Leu Val Phe		
100	105	110
Val Leu Gly Ile Ile Gly Asn Ser Thr Leu Leu Arg Ile Ile Tyr Lys		
115	120	125
Asn Lys Cys Met Arg Asn Gly Pro Asn Ile Leu Ile Ala Ser Leu Ala		
130	135	140
Leu Gly Asp Leu Leu His Ile Ile Ile Asp Ile Pro Ile Asn Thr Tyr		
145	150	155
Lys Leu Leu Ala Glu Asp Trp Pro Phe Gly Ala Glu Met Cys Lys Leu		
165	170	175
Val Pro Phe Ile Gln Lys Ala Ser Val Gly Ile Thr Val Leu Ser Leu		
180	185	190
Cys Ala Leu Ser Ile Asp Arg Tyr Arg Ala Val Ala Ser Trp Ser Arg		
195	200	205
Ile Lys Gly Ile Gly Val Pro Lys Trp Thr Ala Val Glu Ile Val Leu		
210	215	220
Ile Trp Val Val Ser Val Val Leu Ala Val Pro Glu Ala Ile Gly Phe		
225	230	235
Asp Met Ile Thr Ser Asp Tyr Lys Gly Lys Pro Leu Arg Val Cys Met		
245	250	255
Leu Asn Pro Phe Gln Lys Thr Ala Phe Met Gln Phe Tyr Lys Thr Ala		
260	265	270

Lys Asp Trp Trp Leu Phe Ser Phe Tyr Phe Cys Leu Pro Leu Ala Ile
 275 280 285
 Thr Ala Val Phe Tyr Thr Leu Met Thr Cys Glu Met Leu Arg Lys Lys
 290 295 300
 Ser Gly Met Gln Ile Ala Leu Asn Asp His Leu Lys Gln Arg Arg Glu
 305 310 315 320
 Val Ala Lys Thr Val Phe Cys Leu Val Leu Val Phe Ala Leu Cys Trp
 325 330 335
 Leu Pro Leu His Leu Ser Arg Ile Leu Lys Leu Thr Leu Tyr Asp Gln
 340 345 350
 Ser Asn Pro His Arg Cys Glu Leu Leu Ser Phe Leu Leu Val Leu Asp
 355 360 365
 Tyr Ile Gly Ile Asn Met Ala Ser Leu Asn Ser Cys Ile Asn Pro Ile
 370 375 380
 Ala Leu Tyr Leu Val Ser Lys Arg Phe Lys Asn Cys Phe Lys Ser Cys
 385 390 395 400
 Leu Cys Cys Trp Cys Gln Thr Phe Glu Glu Lys Gln Ser Leu Glu Glu
 405 410 415
 Lys Gln Ser Cys Leu Lys Phe Lys Ala Asn Asp His Gly Tyr Asp Asn
 420 425 430
 Phe Arg Ser Ser Asn Lys Tyr Ser Ser Ser
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<210> 187

<211> 1114

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (9).. (1040)

<400> 187

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gag gag gca ccg gcc tgg agg ctg cgc agc gag cag ttt ccc agc aaa 98
Glu Glu Ala Pro Ala Trp Arg Leu Arg Ser Glu Gln Phe Pro Ser Lys
      15             20             25             30
gtg ggc ggg cgg ccc gcg tgg ttg ggc ttg gcg gag ctg ccg ggg ccc 146
Val Gly Gly Arg Pro Ala Trp Leu Gly Leu Ala Glu Leu Pro Gly Pro
            35             40             45
ggg gcg ctg gcg tgt gcg cgc tgc ggc cgc ccg ctc gcc ttc ctg ctg 194
Gly Ala Leu Ala Cys Ala Arg Cys Gly Arg Pro Leu Ala Phe Leu Leu
            50             55             60
cag gtg tac gca ccg ctg ccg ggc cgg gac gac gcc ttc cac cgc agc 242
Gln Val Tyr Ala Pro Leu Pro Gly Arg Asp Asp Ala Phe His Arg Ser
            65             70             75
ctc ttt ctc ttc tgc tgt cgc gag ccg ctg tgt tgc gcc ggc ctg cga 290
Leu Phe Leu Phe Cys Cys Arg Glu Pro Leu Cys Cys Ala Gly Leu Arg
            80             85             90
gtt ttt cgt aat cag cta cca agg aac aac gca ttc tac tcc tat gag 338
Val Phe Arg Asn Gln Leu Pro Arg Asn Asn Ala Phe Tyr Ser Tyr Glu
            95             100             105             110
ccc cct tct gaa aca gaa gct ttg ggt acg gaa tgt gtg tgc ctc cag 386
Pro Pro Ser Glu Thr Glu Ala Leu Gly Thr Glu Cys Val Cys Leu Gln
            115             120             125
ctc aag tct gga gcc cat ctc tgt cgg gtt tgt ggt tgc ttg gcc cct 434

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Leu Lys Ser Gly Ala His Leu Cys Arg Val Cys Gly Cys Leu Ala Pro
 130 135 140
 atg aca tgc tct agg tgc aaa cag gca cat tac tgc agc aag gag cat 482
 Met Thr Cys Ser Arg Cys Lys Gln Ala His Tyr Cys Ser Lys Glu His
 145 150 155
 cag aca tta gac tgg cgg ctg gga cac aag cag gct tgt aca cag tca 530
 Gln Thr Leu Asp Trp Arg Leu Gly His Lys Gln Ala Cys Thr Gln Ser
 160 165 170
 gac aaa ata gac cat atg gtt cca gac cac aac ttc ctg ttt cca gaa 578
 Asp Lys Ile Asp His Met Val Pro Asp His Asn Phe Leu Phe Pro Glu
 175 180 185 190
 ttt gaa att gta aca gaa aca gaa gat gaa att ttg cct gag gtt gtg 626
 Phe Glu Ile Val Thr Glu Thr Glu Asp Glu Ile Leu Pro Glu Val Val
 195 200 205
 gaa atg gag gat tat tct gaa gtt aca gga agc atg ggg gga att cct 674
 Glu Met Glu Asp Tyr Ser Glu Val Thr Gly Ser Met Gly Gly Ile Pro
 210 215 220
 gag gaa gaa cta gat tcc atg gca aag cac gaa tcc aag gaa gat cac 722
 Glu Glu Glu Leu Asp Ser Met Ala Lys His Glu Ser Lys Glu Asp His
 225 230 235
 ata ttc caa aag ttt aaa tct aaa ata ccc ctt gaa cca gag cag att 770
 Ile Phe Gln Lys Phe Lys Ser Lys Ile Pro Leu Glu Pro Glu Gln Ile
 240 245 250
 ctc agg tat gga aga ggg att aaa ccc atc tgg att tct ggt gaa aat 818
 Leu Arg Tyr Gly Arg Gly Ile Lys Pro Ile Trp Ile Ser Gly Glu Asn
 255 260 265 270
 att cct caa gaa aaa gat att cca gat tgc ccg tgt ggt gcc aag aga 866
 Ile Pro Gln Glu Lys Asp Ile Pro Asp Cys Pro Cys Gly Ala Lys Arg
 275 280 285

ata ttt gaa ttc cag gtc atg cct cag ctg ttg aac cac ctg aag gca 914
 Ile Phe Glu Phe Gln Val Met Pro Gln Leu Leu Asn His Leu Lys Ala
 290 295 300
 gac aga ctc ggc aga agc atc gac tgg ggt gtc ttg gct gtc ttc acc 962
 Asp Arg Leu Gly Arg Ser Ile Asp Trp Gly Val Leu Ala Val Phe Thr
 305 310 315
 tgt gct gag agc tgt agc ctg ggt agc ggc tac aca gaa gaa ttt gtg 1010
 Cys Ala Glu Ser Cys Ser Leu Gly Ser Gly Tyr Thr Glu Glu Phe Val
 320 325 330
 tgg aag cag gat gtg aca gat aca cct taa aaggggttaa attcttgcaa 1060
 Trp Lys Gln Asp Val Thr Asp Thr Pro
 335 340
 aagatatataa ataaaaactt aaataaaaaac taaaaacccc tgacgtagct cgag 1114

<210> 188

<211> 343

<212> PRT

<213> Mus musculus

<400> 188

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 Ala Pro Ala Trp Arg Leu Arg Ser Glu Gln Phe Pro Ser Lys Val Gly
 20 25 30
 Gly Arg Pro Ala Trp Leu Gly Leu Ala Glu Leu Pro Gly Pro Gly Ala
 35 40 45
 Leu Ala Cys Ala Arg Cys Gly Arg Pro Leu Ala Phe Leu Leu Gln Val
 50 55 60
 Tyr Ala Pro Leu Pro Gly Arg Asp Asp Ala Phe His Arg Ser Leu Phe

65	70	75	80
Leu Phe Cys Cys Arg Glu Pro Leu Cys Cys Ala Gly Leu Arg Val Phe			
	85	90	95
Arg Asn Gln Leu Pro Arg Asn Asn Ala Phe Tyr Ser Tyr Glu Pro Pro			
	100	105	110
Ser Glu Thr Glu Ala Leu Gly Thr Glu Cys Val Cys Leu Gln Leu Lys			
	115	120	125
Ser Gly Ala His Leu Cys Arg Val Cys Gly Cys Leu Ala Pro Met Thr			
	130	135	140
Cys Ser Arg Cys Lys Gln Ala His Tyr Cys Ser Lys Glu His Gln Thr			
145	150	155	160
Leu Asp Trp Arg Leu Gly His Lys Gln Ala Cys Thr Gln Ser Asp Lys			
	165	170	175
Ile Asp His Met Val Pro Asp His Asn Phe Leu Phe Pro Glu Phe Glu			
	180	185	190
Ile Val Thr Glu Thr Glu Asp Glu Ile Leu Pro Glu Val Val Glu Met			
	195	200	205
Glu Asp Tyr Ser Glu Val Thr Gly Ser Met Gly Gly Ile Pro Glu Glu			
	210	215	220
Glu Leu Asp Ser Met Ala Lys His Glu Ser Lys Glu Asp His Ile Phe			
225	230	235	240
Gln Lys Phe Lys Ser Lys Ile Pro Leu Glu Pro Glu Gln Ile Leu Arg			
	245	250	255
Tyr Gly Arg Gly Ile Lys Pro Ile Trp Ile Ser Gly Glu Asn Ile Pro			
	260	265	270
Gln Glu Lys Asp Ile Pro Asp Cys Pro Cys Gly Ala Lys Arg Ile Phe			
	275	280	285
Glu Phe Gln Val Met Pro Gln Leu Leu Asn His Leu Lys Ala Asp Arg			
290	295	300	

Phe Gly Arg Leu His Cys Thr Thr Ala Val Ile Arg Asn Ile Asn Asp
 40 45 50
 caa gtt ctc ttc gtt gac aaa aga cag cct gtg ttc gag gat atg act 368
 Gln Val Leu Phe Val Asp Lys Arg Gln Pro Val Phe Glu Asp Met Thr
 55 60 65
 gat att gat caa agt gcc agt gaa ccc cag acc aga ctg ata ata tac 416
 Asp Ile Asp Gln Ser Ala Ser Glu Pro Gln Thr Arg Leu Ile Ile Tyr
 70 75 80
 atg tac aaa gac agt gaa gta aga gga ctg gct gtg acc ctc tct gtg 464
 Met Tyr Lys Asp Ser Glu Val Arg Gly Leu Ala Val Thr Leu Ser Val
 85 90 95 100
 aag gat agt aaa atg tct acc ctc tcc tgt aag aac aag atc att tcc 512
 Lys Asp Ser Lys Met Ser Thr Leu Ser Cys Lys Asn Lys Ile Ile Ser
 105 110 115
 ttt gag gaa atg gat cca cct gaa aat att gat gat ata caa agt gat 560
 Phe Glu Glu Met Asp Pro Pro Glu Asn Ile Asp Asp Ile Gln Ser Asp
 120 125 130
 ctc ata ttc ttt cag aaa cgt gtt cca gga cac aac aag atg gag ttt 608
 Leu Ile Phe Phe Gln Lys Arg Val Pro Gly His Asn Lys Met Glu Phe
 135 140 145
 gaa tct tca ctg tat gaa gga cac ttt ctt gct tgc caa aag gaa gat 656
 Glu Ser Ser Leu Tyr Glu Gly His Phe Leu Ala Cys Gln Lys Glu Asp
 150 155 160
 gat gct ttc aaa ctc att ctg aaa aaa aag gat gaa aat ggg gat aaa 704
 Asp Ala Phe Lys Leu Ile Leu Lys Lys Lys Asp Glu Asn Gly Asp Lys
 165 170 175 180
 tct gta atg ttc act ctc act aac tta cat caa agt tag gtggggaggg 753
 Ser Val Met Phe Thr Leu Thr Asn Leu His Gln Ser
 185 190

tttgtgttcc agaaagatga ttagcacaca tgcgccttgt gatgacctcg cctgtatttc 813
 cataacagaa tacccgaggc tgcatgattt atagagtaaa cacgtttatt tgt 866

<210> 190

<211> 192

<212> PRT

<213> Mus musculus

<400> 190

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Phe	Ile	Asp	Asn	Thr	Leu	Tyr	Phe	Ile	Pro	Glu	Glu	Asn	Gly	Asp	Leu
			20					25					30		
Glu	Ser	Asp	Asn	Phe	Gly	Arg	Leu	His	Cys	Thr	Thr	Ala	Val	Ile	Arg
		35				40						45			
Asn	Ile	Asn	Asp	Gln	Val	Leu	Phe	Val	Asp	Lys	Arg	Gln	Pro	Val	Phe
	50					55					60				
Glu	Asp	Met	Thr	Asp	Ile	Asp	Gln	Ser	Ala	Ser	Glu	Pro	Gln	Thr	Arg
	65				70					75				80	
Leu	Ile	Ile	Tyr	Met	Tyr	Lys	Asp	Ser	Glu	Val	Arg	Gly	Leu	Ala	Val
			85					90					95		
Thr	Leu	Ser	Val	Lys	Asp	Ser	Lys	Met	Ser	Thr	Leu	Ser	Cys	Lys	Asn
			100					105					110		
Lys	Ile	Ile	Ser	Phe	Glu	Glu	Met	Asp	Pro	Pro	Glu	Asn	Ile	Asp	Asp
		115					120					125			
Ile	Gln	Ser	Asp	Leu	Ile	Phe	Phe	Gln	Lys	Arg	Val	Pro	Gly	His	Asn
	130					135					140				
Lys	Met	Glu	Phe	Glu	Ser	Ser	Leu	Tyr	Glu	Gly	His	Phe	Leu	Ala	Cys
	145					150				155			160		

Gln Lys Glu Asp Asp Ala Phe Lys Leu Ile Leu Lys Lys Lys Asp Glu

165

170

175

Asn Gly Asp Lys Ser Val Met Phe Thr Leu Thr Asn Leu His Gln Ser

180

185

190

<210> 191

<211> 3929

<212> DNA

<213> *Mus musculus*

<220>

<221> CDS

<222> (571).. (2475)

<400> 191

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 gcacagtctt gctcagggtc ctgcactctc caactgtgac aatgtctccg atctgtacat 180
 ccctgaaaca gggggacagg tgcacagaca tgttcttgtg acgcttctca aagcgattgt 240
 actttcggat gtaatggaga tagtcccggc ggatgacaat ggtcctctgc atcttcatct 300
 tcgtcagac accagacagg atccgacctc ggatggagac gttaccagtg aaggggcatt 360
 tcttgtctat gtaggtaccc tcaatagcct ctttaggcgt cttgaagcct agaccgatat 420
 tctttagta ccgaggaggt ttttccttgc cggtttctcc cagcagaacc cgcttcttgt 480
 tttgaaagat cgtaggctgc ttttggttaag cagcttccgt ctgaatgtcc gccatcttcc 540
 ttcttatttc atagcaaata agaaaaatgt atg ttc tac gca cat ttt gtc ctc 594

Met Phe Tyr Ala His Phe Val Leu

1

5

agt aaa cga ggg cct ctg gcc aaa atc tgg ctg gcg gcc cat tgg gac 642

Ser Lys Arg Gly Pro Leu Ala Lys Ile Trp Leu Ala Ala His Trp Asp

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aag aag cta acc aaa gcc cat gta ttt gag tgc aac tta gag agc agt	690		
Lys Lys Leu Thr Lys Ala His Val Phe Glu Cys Asn Leu Glu Ser Ser			
25	30	35	40
gtg gag agc atc atc tca cca aag gtg aag atg gcg ctg cgg acg tca	738		
Val Glu Ser Ile Ile Ser Pro Lys Val Lys Met Ala Leu Arg Thr Ser			
45	50	55	
gga cac ctt ctc ctg gga gta gtc cgc atc tat cac agg aaa gcc aaa	786		
Gly His Leu Leu Leu Gly Val Val Arg Ile Tyr His Arg Lys Ala Lys			
60	65	70	
tac ctc ctc gca gac tgt aat gaa gca ttt att aaa ata aag atg gcg	834		
Tyr Leu Leu Ala Asp Cys Asn Glu Ala Phe Ile Lys Ile Lys Met Ala			
75	80	85	
ttt cgg cca ggt gtt gtc gat cta cct gag gaa aat cgg gaa gca gct	882		
Phe Arg Pro Gly Val Val Asp Leu Pro Glu Glu Asn Arg Glu Ala Ala			
90	95	100	
tat aat gcc att act tta cct gag gaa ttc cac gat ttt gat cag cca	930		
Tyr Asn Ala Ile Thr Leu Pro Glu Glu Phe His Asp Phe Asp Gln Pro			
105	110	115	120
ctg cca gat tta gat gat att gac gtc gcc cag cag ttc agc ctg aac	978		
Leu Pro Asp Leu Asp Asp Ile Asp Val Ala Gln Gln Phe Ser Leu Asn			
125	130	135	
caa agc aga gta gaa gag ata acc atg aga gaa gaa gtc gga aac atc	1026		
Gln Ser Arg Val Glu Glu Ile Thr Met Arg Glu Glu Val Gly Asn Ile			
140	145	150	
agt atc cta cag gaa aat gac ttt ggt gac ttc gga atg gat gac cgt	1074		
Ser Ile Leu Gln Glu Asn Asp Phe Gly Asp Phe Gly Met Asp Asp Arg			
155	160	165	
gaa ata atg aga gaa ggc agt gct ttc gag gat gac gac atg tta gtg	1122		

Glu Ile Met Arg Glu Gly Ser Ala Phe Glu Asp Asp Asp Met Leu Val
 170 175 180
 agc acc agc gct tcc aac ctt ctc ctc gag cca gag cag agc acc agc 1170
 Ser Thr Ser Ala Ser Asn Leu Leu Leu Glu Pro Glu Gln Ser Thr Ser
 185 190 195 200
 aac ctg aat gaa aag atg aat cac tta gag tac gaa gac cag tac aaa 1218
 Asn Leu Asn Glu Lys Met Asn His Leu Glu Tyr Glu Asp Gln Tyr Lys
 205 210 215
 gat gac aat ttt gga gaa gga aat gat ggc ggt ata tta gat gac aaa 1266
 Asp Asp Asn Phe Gly Glu Gly Asn Asp Gly Gly Ile Leu Asp Asp Lys
 220 225 230
 ctt ata agt aat aat gat ggt ggc atc ttt gac gat ccc cct gcc ttg 1314
 Leu Ile Ser Asn Asn Asp Gly Gly Ile Phe Asp Asp Pro Pro Ala Leu
 235 240 245
 tct gag gca ggg gtc atg ttg cca gag caa cct gca cat gat gac atg 1362
 Ser Glu Ala Gly Val Met Leu Pro Glu Gln Pro Ala His Asp Asp Met
 250 255 260
 gat gaa gat gac aat ggc tca ctg ggt ggg ccg gat agt ccc gac tct 1410
 Asp Glu Asp Asp Asn Gly Ser Leu Gly Gly Pro Asp Ser Pro Asp Ser
 265 270 275 280
 gtg gat cct gtc gaa ccg atg cca act atg act gat cag aca act ctc 1458
 Val Asp Pro Val Glu Pro Met Pro Thr Met Thr Asp Gln Thr Thr Leu
 285 290 295
 gtc cca aac gag gaa gaa gct ttt gcg ttg gag ccc att gat ata act 1506
 Val Pro Asn Glu Glu Glu Ala Phe Ala Leu Glu Pro Ile Asp Ile Thr
 300 305 310
 gtc aaa gag aca aaa gcc aag agg aag agg aag ctg att gtt gac agt 1554
 Val Lys Glu Thr Lys Ala Lys Arg Lys Arg Lys Leu Ile Val Asp Ser
 315 320 325

gtc aaa gaa ttg gat agt aag acc att aga gcc cag ctt agc gat tat 1602
 Val Lys Glu Leu Asp Ser Lys Thr Ile Arg Ala Gln Leu Ser Asp Tyr
 330 335 340
 tct gat att gtt acg act ctg gac ctg gct ccg cca acc aag aag ctt 1650
 Ser Asp Ile Val Thr Thr Leu Asp Leu Ala Pro Pro Thr Lys Lys Leu
 345 350 355 360
 atg atg tgg aaa gag aca gga gga gtg gaa aag ctc ttc tcc tta cca 1698
 Met Met Trp Lys Glu Thr Gly Gly Val Glu Lys Leu Phe Ser Leu Pro
 365 370 375
 gca cag ccc ctg tgg aat aac cgg cta ctg aag ctc ttc aca cgc tgc 1746
 Ala Gln Pro Leu Trp Asn Asn Arg Leu Leu Lys Leu Phe Thr Arg Cys
 380 385 390
 ctt acc cca ctt gta cca gaa gac ctt agg aag aga agg aaa ggg gga 1794
 Leu Thr Pro Leu Val Pro Glu Asp Leu Arg Lys Arg Arg Lys Gly Gly
 395 400 405
 gag gca gat aat ctg gat gag ttc ctc aaa gag ttt gag aat cca gag 1842
 Glu Ala Asp Asn Leu Asp Glu Phe Leu Lys Glu Phe Glu Asn Pro Glu
 410 415 420
 gtt ccc aga gag gag cag cag cca cag cag cag cag cca cag ccg cag 1890
 Val Pro Arg Glu Glu Gln Gln Pro Gln Gln Gln Gln Pro Gln Pro Gln
 425 430 435 440
 cga gat gtc atc gat gag ccc att ata gaa gag cca agc cgc ctc cag 1938
 Arg Asp Val Ile Asp Glu Pro Ile Ile Glu Glu Pro Ser Arg Leu Gln
 445 450 455
 gac tca gtg atg gag gcc agc aga aca acc ata gaa gaa tca gcc atg 1986
 Asp Ser Val Met Glu Ala Ser Arg Thr Thr Ile Glu Glu Ser Ala Met
 460 465 470
 ccc cca cca ccc cct caa gga gtt aag cgg aaa gcc ggg caa ata gac 2034
 Pro Pro Pro Pro Pro Gln Gly Val Lys Arg Lys Ala Gly Gln Ile Asp

475	480	485	
cca gag cct tcg ata cct cct cag cag gta gag caa atg gaa ata cca	2082		
Pro Glu Pro Ser Ile Pro Pro Gln Gln Val Glu Gln Met Glu Ile Pro			
490	495	500	
cca gta gaa ctt ccc cca gag gag cct cca aat atc tgt cag ctg atc	2130		
Pro Val Glu Leu Pro Pro Glu Glu Pro Pro Asn Ile Cys Gln Leu Ile			
505	510	515	520
ccg gag tta gag ctc cta ccg gag aag gag aag gaa aaa gag aag gag	2178		
Pro Glu Leu Glu Leu Leu Pro Glu Lys Glu Lys Glu Lys Glu Lys Glu			
525	530	535	
aag gaa gag gag gag gag gag gat gaa gat gct tca ggg ggt gat cag	2226		
Lys Glu Glu Glu Glu Glu Glu Asp Glu Asp Ala Ser Gly Gly Asp Gln			
540	545	550	
gat caa gag gaa agg aga tgg aac aaa cgc act cag cag atg ctt cat	2274		
Asp Gln Glu Glu Arg Arg Trp Asn Lys Arg Thr Gln Gln Met Leu His			
555	560	565	
ggt ctt cag cga gct ctt gct aaa act gga gca gag tct atc agt ttg	2322		
Gly Leu Gln Arg Ala Leu Ala Lys Thr Gly Ala Glu Ser Ile Ser Leu			
570	575	580	
ctt gag ctg tgt cga aac aca aac cga aag cag gca gca gca aag ttc	2370		
Leu Glu Leu Cys Arg Asn Thr Asn Arg Lys Gln Ala Ala Ala Lys Phe			
585	590	595	600
tac agc ttt ttg gtt ctt aag aag cag caa gcc atc gag ctc aca cag	2418		
Tyr Ser Phe Leu Val Leu Lys Lys Gln Gln Ala Ile Glu Leu Thr Gln			
605	610	615	
gaa gag ccg tac agt gac atc att gca acc cct gga cca cgg ttc cat	2466		
Glu Glu Pro Tyr Ser Asp Ile Ile Ala Thr Pro Gly Pro Arg Phe His			
620	625	630	
att atc tga tgagctagat gtgttcgagc tagtgataac tcactagtac	2515		

Ile Ile

635

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atgttgaag gaaaaccigc ctaggaaatg cctgacactt taagaactgt ggtttgagtc 2875
ccttgacagg aagagaaaaa tgtcttccca tcagtgaac caccggtctg gtttaaccact 2935
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<210> 192

<211> 634

<212> PRT

<213> Mus musculus

<400> 192

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 Ile Trp Leu Ala Ala His Trp Asp Lys Lys Leu Thr Lys Ala His Val
 20 25 30
 Phe Glu Cys Asn Leu Glu Ser Ser Val Glu Ser Ile Ile Ser Pro Lys
 35 40 45
 Val Lys Met Ala Leu Arg Thr Ser Gly His Leu Leu Leu Gly Val Val
 50 55 60
 Arg Ile Tyr His Arg Lys Ala Lys Tyr Leu Leu Ala Asp Cys Asn Glu
 65 70 75 80
 Ala Phe Ile Lys Ile Lys Met Ala Phe Arg Pro Gly Val Val Asp Leu
 85 90 95
 Pro Glu Glu Asn Arg Glu Ala Ala Tyr Asn Ala Ile Thr Leu Pro Glu
 100 105 110
 Glu Phe His Asp Phe Asp Gln Pro Leu Pro Asp Leu Asp Asp Ile Asp
 115 120 125
 Val Ala Gln Gln Phe Ser Leu Asn Gln Ser Arg Val Glu Glu Ile Thr
 130 135 140
 Met Arg Glu Glu Val Gly Asn Ile Ser Ile Leu Gln Glu Asn Asp Phe
 145 150 155 160
 Gly Asp Phe Gly Met Asp Asp Arg Glu Ile Met Arg Glu Gly Ser Ala
 165 170 175
 Phe Glu Asp Asp Asp Met Leu Val Ser Thr Ser Ala Ser Asn Leu Leu
 180 185 190
 Leu Glu Pro Glu Gln Ser Thr Ser Asn Leu Asn Glu Lys Met Asn His

195	200	205
Leu Glu Tyr Glu Asp Gln Tyr Lys Asp Asp Asn Phe Gly Glu Gly Asn		
210	215	220
Asp Gly Gly Ile Leu Asp Asp Lys Leu Ile Ser Asn Asn Asp Gly Gly		
225	230	235
Ile Phe Asp Asp Pro Pro Ala Leu Ser Glu Ala Gly Val Met Leu Pro		
245	250	255
Glu Gln Pro Ala His Asp Asp Met Asp Glu Asp Asp Asn Gly Ser Leu		
260	265	270
Gly Gly Pro Asp Ser Pro Asp Ser Val Asp Pro Val Glu Pro Met Pro		
275	280	285
Thr Met Thr Asp Gln Thr Thr Leu Val Pro Asn Glu Glu Glu Ala Phe		
290	295	300
Ala Leu Glu Pro Ile Asp Ile Thr Val Lys Glu Thr Lys Ala Lys Arg		
305	310	315
Lys Arg Lys Leu Ile Val Asp Ser Val Lys Glu Leu Asp Ser Lys Thr		
325	330	335
Ile Arg Ala Gln Leu Ser Asp Tyr Ser Asp Ile Val Thr Thr Leu Asp		
340	345	350
Leu Ala Pro Pro Thr Lys Lys Leu Met Met Trp Lys Glu Thr Gly Gly		
355	360	365
Val Glu Lys Leu Phe Ser Leu Pro Ala Gln Pro Leu Trp Asn Asn Arg		
370	375	380
Leu Leu Lys Leu Phe Thr Arg Cys Leu Thr Pro Leu Val Pro Glu Asp		
385	390	395
Leu Arg Lys Arg Arg Lys Gly Gly Glu Ala Asp Asn Leu Asp Glu Phe		
405	410	415
Leu Lys Glu Phe Glu Asn Pro Glu Val Pro Arg Glu Glu Gln Gln Pro		
420	425	430

Gln Gln Gln Gln Pro Gln Pro Gln Arg Asp Val Ile Asp Glu Pro Ile
 435 440 445
 Ile Glu Glu Pro Ser Arg Leu Gln Asp Ser Val Met Glu Ala Ser Arg
 450 455 460
 Thr Thr Ile Glu Glu Ser Ala Met Pro Pro Pro Pro Pro Gln Gly Val
 465 470 475 480
 Lys Arg Lys Ala Gly Gln Ile Asp Pro Glu Pro Ser Ile Pro Pro Gln
 485 490 495
 Gln Val Glu Gln Met Glu Ile Pro Pro Val Glu Leu Pro Pro Glu Glu
 500 505 510
 Pro Pro Asn Ile Cys Gln Leu Ile Pro Glu Leu Glu Leu Leu Pro Glu
 515 520 525
 Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Glu Glu Glu Glu Glu Asp
 530 535 540
 Glu Asp Ala Ser Gly Gly Asp Gln Asp Gln Glu Glu Arg Arg Trp Asn
 545 550 555 560
 Lys Arg Thr Gln Gln Met Leu His Gly Leu Gln Arg Ala Leu Ala Lys
 565 570 575
 Thr Gly Ala Glu Ser Ile Ser Leu Leu Glu Leu Cys Arg Asn Thr Asn
 580 585 590
 Arg Lys Gln Ala Ala Ala Lys Phe Tyr Ser Phe Leu Val Leu Lys Lys
 595 600 605
 Gln Gln Ala Ile Glu Leu Thr Gln Glu Glu Pro Tyr Ser Asp Ile Ile
 610 615 620
 Ala Thr Pro Gly Pro Arg Phe His Ile Ile
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<210> 193

<211> 1350

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (205).. (1107)

<400> 193

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 tggaaggcta ggttgggtgac ttctgatctt cactatgttc ttctttccag taagtgtgga 180
 cattcctgca gtagagagag catc atg gtg gct ttc aaa gga gtc tgg act 231

Met Val Ala Phe Lys Gly Val Trp Thr

1

5

cag gct ttc tgg aag gca gtc tca gca gaa ttt ctg gcc acg ctt atc 279

Gln Ala Phe Trp Lys Ala Val Ser Ala Glu Phe Leu Ala Thr Leu Ile

10

15

20

25

ttt gtt ttg ggt gtg gga tcc acc ata aac tgg ggt ggc tca gaa aac 327

Phe Val Leu Gly Val Gly Ser Thr Ile Asn Trp Gly Gly Ser Glu Asn

30

35

40

ccc tta cct gtg gac atg gtc ctc atc tcc ctt tgc ttt gga ctc agc 375

Pro Leu Pro Val Asp Met Val Leu Ile Ser Leu Cys Phe Gly Leu Ser

45

50

55

att gca acc atg gtg cag tgc ctt ggc cac atc agc ggt ggc cac atc 423

Ile Ala Thr Met Val Gln Cys Leu Gly His Ile Ser Gly Gly His Ile

60

65

70

aat cca gct gtg act gta gcc atg gtg tgc aca cga aag atc agc atc 471

Asn Pro Ala Val Thr Val Ala Met Val Cys Thr Arg Lys Ile Ser Ile

75

80

85

gct aag tcc gtc ttc tac atc att gca cag tgc ctg ggg gcc atc att 519
 Ala Lys Ser Val Phe Tyr Ile Ile Ala Gln Cys Leu Gly Ala Ile Ile
 90 95 100 105
 gga gcc ggc atc ctc tac ctg gtc aca cct ccc agt gtg gtt gga gga 567
 Gly Ala Gly Ile Leu Tyr Leu Val Thr Pro Pro Ser Val Val Gly Gly
 110 115 120
 ttg gga gtc acc acg gtt cat gga aac ctc acc gct ggc cat ggg ctc 615
 Leu Gly Val Thr Thr Val His Gly Asn Leu Thr Ala Gly His Gly Leu
 125 130 135
 ctg gtg gag tta ata atc act ttc cag ttg gtg ttc act gtt ttt gcc 663
 Leu Val Glu Leu Ile Ile Thr Phe Gln Leu Val Phe Thr Val Phe Ala
 140 145 150
 agc tgt gat tcc aaa cgg act gat gtc act ggt tca ata gct tta gca 711
 Ser Cys Asp Ser Lys Arg Thr Asp Val Thr Gly Ser Ile Ala Leu Ala
 155 160 165
 att gga ttt tcc gtt gca att gga cat ttg ttt gca atc aat tat act 759
 Ile Gly Phe Ser Val Ala Ile Gly His Leu Phe Ala Ile Asn Tyr Thr
 170 175 180 185
 gga gcc agc atg aat cca gct cga tct ttt gga ccc gca gtt atc atg 807
 Gly Ala Ser Met Asn Pro Ala Arg Ser Phe Gly Pro Ala Val Ile Met
 190 195 200
 gga aac tgg gca aac cac tgg ata tat tgg gtt gga cca atc atg ggc 855
 Gly Asn Trp Ala Asn His Trp Ile Tyr Trp Val Gly Pro Ile Met Gly
 205 210 215
 gct gtg ctg gca ggt gcc ctt tat gag tat gtc ttc tgt cct gat gig 903
 Ala Val Leu Ala Gly Ala Leu Tyr Glu Tyr Val Phe Cys Pro Asp Val
 220 225 230
 gag ctc aaa cgt cgc ctt aag gaa gcc ttc agc aaa gcc gcg cag cag 951
 Glu Leu Lys Arg Arg Leu Lys Glu Ala Phe Ser Lys Ala Ala Gln Gln

235 240 245
 aca aaa ggg agc tac atg gag gtg gag gac aac cgg agc caa gtg gag 999
 Thr Lys Gly Ser Tyr Met Glu Val Glu Asp Asn Arg Ser Gln Val Glu
 250 255 260 265
 acg gaa gac ttg atc ctg aag ccc gga gtg gtg cat gtg att gac att 1047
 Thr Glu Asp Leu Ile Leu Lys Pro Gly Val Val His Val Ile Asp Ile
 270 275 280
 gac cgt gga gaa gag aag aag gga agg gac tct tcg gga gag gta ttg 1095
 Asp Arg Gly Glu Glu Lys Lys Gly Arg Asp Ser Ser Gly Glu Val Leu
 285 290 295
 tct tcc gta tga ctagaggaca gcactgaagg cagaagagac tccctagacc 1147
 Ser Ser Val
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 aaaagtaaaa aaaaaaaaaa aaa 1350

<210> 194

<211> 300

<212> PRT

<213> Mus musculus

<400> 194

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Ser Ala Glu Phe Leu Ala Thr Leu Ile Phe Val Leu Gly Val Gly Ser

20

25

30

Thr Ile Asn Trp Gly Gly Ser Glu Asn Pro Leu Pro Val Asp Met Val

35	40	45
Leu Ile Ser Leu Cys Phe Gly Leu Ser Ile Ala Thr Met Val Gln Cys		
50	55	60
Leu Gly His Ile Ser Gly Gly His Ile Asn Pro Ala Val Thr Val Ala		
65	70	75
Met Val Cys Thr Arg Lys Ile Ser Ile Ala Lys Ser Val Phe Tyr Ile		
85	90	95
Ile Ala Gln Cys Leu Gly Ala Ile Ile Gly Ala Gly Ile Leu Tyr Leu		
100	105	110
Val Thr Pro Pro Ser Val Val Gly Gly Leu Gly Val Thr Thr Val His		
115	120	125
Gly Asn Leu Thr Ala Gly His Gly Leu Leu Val Glu Leu Ile Ile Thr		
130	135	140
Phe Gln Leu Val Phe Thr Val Phe Ala Ser Cys Asp Ser Lys Arg Thr		
145	150	155
Asp Val Thr Gly Ser Ile Ala Leu Ala Ile Gly Phe Ser Val Ala Ile		
165	170	175
Gly His Leu Phe Ala Ile Asn Tyr Thr Gly Ala Ser Met Asn Pro Ala		
180	185	190
Arg Ser Phe Gly Pro Ala Val Ile Met Gly Asn Trp Ala Asn His Trp		
195	200	205
Ile Tyr Trp Val Gly Pro Ile Met Gly Ala Val Leu Ala Gly Ala Leu		
210	215	220
Tyr Glu Tyr Val Phe Cys Pro Asp Val Glu Leu Lys Arg Arg Leu Lys		
225	230	235
Glu Ala Phe Ser Lys Ala Ala Gln Gln Thr Lys Gly Ser Tyr Met Glu		
245	250	255
Val Glu Asp Asn Arg Ser Gln Val Glu Thr Glu Asp Leu Ile Leu Lys		
260	265	270

Pro Gly Val Val His Val Ile Asp Ile Asp Arg Gly Glu Glu Lys Lys

275

280

285

Gly Arg Asp Ser Ser Gly Glu Val Leu Ser Ser Val

290

295

300

<210> 195

<211> 2902

<212> DNA

<213> Mus musculus

<400> 195

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 attacaaaga gaagatccag gagtacaatg tgctgctaga cacttgagc agagctgaag 600
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<210> 196

<211> 1928

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (99).. (1784)

<400> 196

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Met Cys Gly Ile Trp Ala

1

5

ctc ttc ggc agc gat gac tgc ctt tcc gtg cag tgt ctg agt gcg atg 164
Leu Phe Gly Ser Asp Asp Cys Leu Ser Val Gln Cys Leu Ser Ala Met

10

15

20

aag atc gcg cac agg ggg cca gat gca ttt cgc ttt gag aat gtc aat 212
Lys Ile Ala His Arg Gly Pro Asp Ala Phe Arg Phe Glu Asn Val Asn

25

30

35

gga tac acc aac tgc tgc ttt ggc ttt cac cgc ttg gct gtg gtt gac 260
Gly Tyr Thr Asn Cys Cys Phe Gly Phe His Arg Leu Ala Val Val Asp

40

45

50

ccg ctg ttt gga atg cag ccg ata aga gtg agg aaa tac cct tat ttg 308
Pro Leu Phe Gly Met Gln Pro Ile Arg Val Arg Lys Tyr Pro Tyr Leu

55

60

65

70

tgg ctc tgt tac aat ggt gaa atc tac aac cac aag gcg cta cag caa	356
Trp Leu Cys Tyr Asn Gly Glu Ile Tyr Asn His Lys Ala Leu Gln Gln	
75 80 85	
cgt ttt gaa ttt gaa tat cag acc aat gtg gat ggt gag att atc ctc	404
Arg Phe Glu Phe Glu Tyr Gln Thr Asn Val Asp Gly Glu Ile Ile Leu	
90 95 100	
cac ctc tat gac aaa gga ggc atc gag aaa acc atc tgt atg ctg gac	452
His Leu Tyr Asp Lys Gly Gly Ile Glu Lys Thr Ile Cys Met Leu Asp	
105 110 115	
ggg gtg ttt gca ttc atc tta ctg gac act gcc aat aag aaa gta ttt	500
Gly Val Phe Ala Phe Ile Leu Leu Asp Thr Ala Asn Lys Lys Val Phe	
120 125 130	
ctg ggc aga gac acc tat gga gtc agg ccc ttg ttt aaa gcc atg aca	548
Leu Gly Arg Asp Thr Tyr Gly Val Arg Pro Leu Phe Lys Ala Met Thr	
135 140 145 150	
gaa gat ggg ttt ctg gct gtg tgt tca gaa gct aaa ggc ctt gtt tcc	596
Glu Asp Gly Phe Leu Ala Val Cys Ser Glu Ala Lys Gly Leu Val Ser	
155 160 165	
tta aaa cac tcc acc act ccc ttc tta aaa gtg gag ccc ttc ctt cct	644
Leu Lys His Ser Thr Thr Pro Phe Leu Lys Val Glu Pro Phe Leu Pro	
170 175 180	
gga cac tat gaa gtt ttg gat tta aaa cca aat ggc aaa gtt gcg tct	692
Gly His Tyr Glu Val Leu Asp Leu Lys Pro Asn Gly Lys Val Ala Ser	
185 190 195	
gtg gaa atg gtc aaa tac cat cac tgt acg gat gaa cca ttg cat gcc	740
Val Glu Met Val Lys Tyr His His Cys Thr Asp Glu Pro Leu His Ala	
200 205 210	
atc tat gac agc gtg gag aaa ctc ttc cca ggc ttt gac cta gag acc	788
Ile Tyr Asp Ser Val Glu Lys Leu Phe Pro Gly Phe Asp Leu Glu Thr	

215	220	225	230	
gtg aag aac aat ctg cgt atc ctt ttt gac aac gct atc aag aaa cgc	836			
Val Lys Asn Asn Leu Arg Ile Leu Phe Asp Asn Ala Ile Lys Lys Arg				
235	240	245		
ttg atg aca gac cgg agg att ggc tgc ctt tta tca ggg ggc ctg gac	884			
Leu Met Thr Asp Arg Arg Ile Gly Cys Leu Leu Ser Gly Gly Leu Asp				
250	255	260		
tcg agc ttg gtt gct gcc tct ctg ctg aag caa ctc aag gag gcc caa	932			
Ser Ser Leu Val Ala Ala Ser Leu Leu Lys Gln Leu Lys Glu Ala Gln				
265	270	275		
gtt cag tat cct ctc cag aca ttt gct att ggc atg gag gac agc ccc	980			
Val Gln Tyr Pro Leu Gln Thr Phe Ala Ile Gly Met Glu Asp Ser Pro				
280	285	290		
gat ctc ctg gcc gct aga aag gtg gca aat tat att gga agc gag cat	1028			
Asp Leu Leu Ala Ala Arg Lys Val Ala Asn Tyr Ile Gly Ser Glu His				
295	300	305	310	
cat gaa gtc ctt ttt aac tct gaa gaa ggc att cag gcc ctg gat gaa	1076			
His Glu Val Leu Phe Asn Ser Glu Glu Gly Ile Gln Ala Leu Asp Glu				
315	320	325		
gtc ata ttt tcc ttg gaa act tat gat att acg aca gtt cgg gca tct	1124			
Val Ile Phe Ser Leu Glu Thr Tyr Asp Ile Thr Thr Val Arg Ala Ser				
330	335	340		
gtg ggc atg tat tta att tcc aag tat att cgg aag aac aca gac agc	1172			
Val Gly Met Tyr Leu Ile Ser Lys Tyr Ile Arg Lys Asn Thr Asp Ser				
345	350	355		
gtg gtg atc ttc tcc gga gag ggg tca gat gaa ctt aca cag ggc tat	1220			
Val Val Ile Phe Ser Gly Glu Gly Ser Asp Glu Leu Thr Gln Gly Tyr				
360	365	370		
ata tat ttc cac aag gct cct tcc cct gag aag gcc gag gag gag agt	1268			

Ile Tyr Phe His Lys Ala Pro Ser Pro Glu Lys Ala Glu Glu Glu Ser
 375 380 385 390
 gag aga ctg ctg aag gaa ctc tac ctg ttt gat gtt ctc cgg gcc gac 1316
 Glu Arg Leu Leu Lys Glu Leu Tyr Leu Phe Asp Val Leu Arg Ala Asp
 395 400 405
 cgc act act gcc gca cat ggt ctc gaa ctg aga gtc ccc ttt ctg gat 1364
 Arg Thr Thr Ala Ala His Gly Leu Glu Leu Arg Val Pro Phe Leu Asp
 410 415 420
 cat cgg ttt tct tcc tat tac ctg tct ctg ccg cca gat atg aga att 1412
 His Arg Phe Ser Ser Tyr Tyr Leu Ser Leu Pro Pro Asp Met Arg Ile
 425 430 435
 cca aaa aat ggc ata gaa aaa cat ctc ctg aga gag act ttt gag gac 1460
 Pro Lys Asn Gly Ile Glu Lys His Leu Leu Arg Glu Thr Phe Glu Asp
 440 445 450
 tgc aac ctg cta ccc aaa gag att ctc tgg cga ccc aaa gaa gcc ttc 1508
 Cys Asn Leu Leu Pro Lys Glu Ile Leu Trp Arg Pro Lys Glu Ala Phe
 455 460 465 470
 agt gat ggg atc acc tca gtc aag aac tcc tgg ttc aag att ttg cag 1556
 Ser Asp Gly Ile Thr Ser Val Lys Asn Ser Trp Phe Lys Ile Leu Gln
 475 480 485
 gac tat gtt gaa cat cag gtt gat gat gaa atg atg tct gca gcc tcc 1604
 Asp Tyr Val Glu His Gln Val Asp Asp Glu Met Met Ser Ala Ala Ser
 490 495 500
 cag aag ttt ccc ttc aat act ccc aaa act aag gaa ggc tac ttc tac 1652
 Gln Lys Phe Pro Phe Asn Thr Pro Lys Thr Lys Glu Gly Tyr Phe Tyr
 505 510 515
 cgt cag atc ttt gaa cgc cat tac cca ggc cgg gct gat tgg ctg act 1700
 Arg Gln Ile Phe Glu Arg His Tyr Pro Gly Arg Ala Asp Trp Leu Thr
 520 525 530

cat tat tgg atg cct aag tgg atc aat gct act gac cct tct gcc cgc 1748
 His Tyr Trp Met Pro Lys Trp Ile Asn Ala Thr Asp Pro Ser Ala Arg
 535 540 545 550
 act ctg acc cat tat aag tca gct gcc aaa gct tag gcactctcta 1794
 Thr Leu Thr His Tyr Lys Ser Ala Ala Lys Ala
 555 560
 cactcttgtg taaaagtaaa tgtttcttcc ggctctgaag gtcgagacag cgacacaatc 1854
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<210> 197

<211> 561

<212> PRT

<213> Mus musculus

<400> 197

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 Arg Phe Glu Asn Val Asn Gly Tyr Thr Asn Cys Cys Phe Gly Phe His
 35 40 45
 Arg Leu Ala Val Val Asp Pro Leu Phe Gly Met Gln Pro Ile Arg Val
 50 55 60
 Arg Lys Tyr Pro Tyr Leu Trp Leu Cys Tyr Asn Gly Glu Ile Tyr Asn
 65 70 75 80
 His Lys Ala Leu Gln Gln Arg Phe Glu Phe Glu Tyr Gln Thr Asn Val
 85 90 95
 Asp Gly Glu Ile Ile Leu His Leu Tyr Asp Lys Gly Gly Ile Glu Lys

100	105	110	
Thr Ile Cys Met Leu Asp Gly Val Phe Ala Phe Ile Leu Leu Asp Thr			
115	120	125	
Ala Asn Lys Lys Val Phe Leu Gly Arg Asp Thr Tyr Gly Val Arg Pro			
130	135	140	
Leu Phe Lys Ala Met Thr Glu Asp Gly Phe Leu Ala Val Cys Ser Glu			
145	150	155	160
Ala Lys Gly Leu Val Ser Leu Lys His Ser Thr Thr Pro Phe Leu Lys			
165	170	175	
Val Glu Pro Phe Leu Pro Gly His Tyr Glu Val Leu Asp Leu Lys Pro			
180	185	190	
Asn Gly Lys Val Ala Ser Val Glu Met Val Lys Tyr His His Cys Thr			
195	200	205	
Asp Glu Pro Leu His Ala Ile Tyr Asp Ser Val Glu Lys Leu Phe Pro			
210	215	220	
Gly Phe Asp Leu Glu Thr Val Lys Asn Asn Leu Arg Ile Leu Phe Asp			
225	230	235	240
Asn Ala Ile Lys Lys Arg Leu Met Thr Asp Arg Arg Ile Gly Cys Leu			
245	250	255	
Leu Ser Gly Gly Leu Asp Ser Ser Leu Val Ala Ala Ser Leu Leu Lys			
260	265	270	
Gln Leu Lys Glu Ala Gln Val Gln Tyr Pro Leu Gln Thr Phe Ala Ile			
275	280	285	
Gly Met Glu Asp Ser Pro Asp Leu Leu Ala Ala Arg Lys Val Ala Asn			
290	295	300	
Tyr Ile Gly Ser Glu His His Glu Val Leu Phe Asn Ser Glu Glu Gly			
305	310	315	320
Ile Gln Ala Leu Asp Glu Val Ile Phe Ser Leu Glu Thr Tyr Asp Ile			
325	330	335	

Thr Thr Val Arg Ala Ser Val Gly Met Tyr Leu Ile Ser Lys Tyr Ile
 340 345 350
 Arg Lys Asn Thr Asp Ser Val Val Ile Phe Ser Gly Glu Gly Ser Asp
 355 360 365
 Glu Leu Thr Gln Gly Tyr Ile Tyr Phe His Lys Ala Pro Ser Pro Glu
 370 375 380
 Lys Ala Glu Glu Glu Ser Glu Arg Leu Leu Lys Glu Leu Tyr Leu Phe
 385 390 395 400
 Asp Val Leu Arg Ala Asp Arg Thr Thr Ala Ala His Gly Leu Glu Leu
 405 410 415
 Arg Val Pro Phe Leu Asp His Arg Phe Ser Ser Tyr Tyr Leu Ser Leu
 420 425 430
 Pro Pro Asp Met Arg Ile Pro Lys Asn Gly Ile Glu Lys His Leu Leu
 435 440 445
 Arg Glu Thr Phe Glu Asp Cys Asn Leu Leu Pro Lys Glu Ile Leu Trp
 450 455 460
 Arg Pro Lys Glu Ala Phe Ser Asp Gly Ile Thr Ser Val Lys Asn Ser
 465 470 475 480
 Trp Phe Lys Ile Leu Gln Asp Tyr Val Glu His Gln Val Asp Asp Glu
 485 490 495
 Met Met Ser Ala Ala Ser Gln Lys Phe Pro Phe Asn Thr Pro Lys Thr
 500 505 510
 Lys Glu Gly Tyr Phe Tyr Arg Gln Ile Phe Glu Arg His Tyr Pro Gly
 515 520 525
 Arg Ala Asp Trp Leu Thr His Tyr Trp Met Pro Lys Trp Ile Asn Ala
 530 535 540
 Thr Asp Pro Ser Ala Arg Thr Leu Thr His Tyr Lys Ser Ala Ala Lys
 545 550 555 560
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<211> 1101

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<220>

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<222> (105).. (1058)

<400> 198

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Met Thr Glu Gln

1

atg acc ctt cgc ggg acc ctt aag ggc cac aat gga tgg gta aca cag 164
 Met Thr Leu Arg Gly Thr Leu Lys Gly His Asn Gly Trp Val Thr Gln

5 10 15 20

atc gca acc aca ccg cag ttc ccg gac atg atc ctg tct gcg tct cga 212
 Ile Ala Thr Thr Pro Gln Phe Pro Asp Met Ile Leu Ser Ala Ser Arg

25 30 35

gac aag acc atc atc atg tgg aag ctg acc aga gat gag acc aac tat 260
 Asp Lys Thr Ile Ile Met Trp Lys Leu Thr Arg Asp Glu Thr Asn Tyr

40 45 50

ggc ata cca cag cgt gct ctg aga ggt cac tcc cac ttc gtt agt gat 308
 Gly Ile Pro Gln Arg Ala Leu Arg Gly His Ser His Phe Val Ser Asp

55 60 65

gtt gtt atc tcc tct gat ggt cag ttt gcg ctc tcg ggc tcc tgg gac 356
 Val Val Ile Ser Ser Asp Gly Gln Phe Ala Leu Ser Gly Ser Trp Asp

70	75	80	
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Gly Thr Leu Arg Leu Trp Asp Leu Thr Thr Gly Thr Thr Thr Arg Arg			
85	90	95	100
ttt gtc ggc cac acc aag gat gtc ttg agc gtc gcc ttc tcc tct gac			452
Phe Val Gly His Thr Lys Asp Val Leu Ser Val Ala Phe Ser Ser Asp			
	105	110	115
aac cgg cag att gtc tct ggg tcc cga gac aag acc ata aag tta tgg			500
Asn Arg Gln Ile Val Ser Gly Ser Arg Asp Lys Thr Ile Lys Leu Trp			
	120	125	130
aat act ctg ggt gtc tgc aag tac acg gtc cag gat gag agt cat tca			548
Asn Thr Leu Gly Val Cys Lys Tyr Thr Val Gln Asp Glu Ser His Ser			
	135	140	145
gaa tgg gtc tct tgt gtc cgc ttc tcc ccg aac agc agc aac cct atc			596
Glu Trp Val Ser Cys Val Arg Phe Ser Pro Asn Ser Ser Asn Pro Ile			
	150	155	160
atc gtc tcc tgc gga tgg gac aag ctg gtc aag gtg tgg aat ctg gct			644
Ile Val Ser Cys Gly Trp Asp Lys Leu Val Lys Val Trp Asn Leu Ala			
	165	170	175
aac tgc aag cta aag acc aac cac att ggc cac act ggc tac ctg aac			692
Asn Cys Lys Leu Lys Thr Asn His Ile Gly His Thr Gly Tyr Leu Asn			
	185	190	195
aca gtg act gtc tct cca gat gga tcc ctc tgt gct tct gga ggc aag			740
Thr Val Thr Val Ser Pro Asp Gly Ser Leu Cys Ala Ser Gly Gly Lys			
	200	205	210
gat ggc cag gct atg ctg tgg gat ctc aat gaa ggc aag cac ctc tac			788
Asp Gly Gln Ala Met Leu Trp Asp Leu Asn Glu Gly Lys His Leu Tyr			
	215	220	225
act tta gat ggt ggg gac atc atc aat gcc ttg tgc ttc agc ccc aac			836

Thr Leu Asp Gly Gly Asp Ile Ile Asn Ala Leu Cys Phe Ser Pro Asn
 230 235 240
 cgc tac tgg ctc tgc gct gcc act ggc ccc agc atc aag atc tgg gac 884
 Arg Tyr Trp Leu Cys Ala Ala Thr Gly Pro Ser Ile Lys Ile Trp Asp
 245 250 255 260
 ttg gag ggc aag atc att gta gat gaa ttg aag caa gaa gtt atc agc 932
 Leu Glu Gly Lys Ile Ile Val Asp Glu Leu Lys Gln Glu Val Ile Ser
 265 270 275
 acc agc agc aag gca gag cca ccc cag tgt acc tct ttg gca tgg tct 980
 Thr Ser Ser Lys Ala Glu Pro Pro Gln Cys Thr Ser Leu Ala Trp Ser
 280 285 290
 gct gat ggc cag act ctg ttt gct ggc tat aca gac aac ttg gtg cga 1028
 Ala Asp Gly Gln Thr Leu Phe Ala Gly Tyr Thr Asp Asn Leu Val Arg
 295 300 305
 gta tgg cag gta act att ggt acc cgc taa aagttttatg acaaagtctt 1078
 Val Trp Gln Val Thr Ile Gly Thr Arg
 310 315
 agaaataaac tggcctcgtg ccg 1101

<210> 199

<211> 317

<212> PRT

<213> Mus musculus

<400> 199

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 Trp Val Thr Gln Ile Ala Thr Thr Pro Gln Phe Pro Asp Met Ile Leu
 20 25 30

Ser Ala Ser Arg Asp Lys Thr Ile Ile Met Trp Lys Leu Thr Arg Asp
 35 40 45
 Glu Thr Asn Tyr Gly Ile Pro Gln Arg Ala Leu Arg Gly His Ser His
 50 55 60
 Phe Val Ser Asp Val Val Ile Ser Ser Asp Gly Gln Phe Ala Leu Ser
 65 70 75 80
 Gly Ser Trp Asp Gly Thr Leu Arg Leu Trp Asp Leu Thr Thr Gly Thr
 85 90 95
 Thr Thr Arg Arg Phe Val Gly His Thr Lys Asp Val Leu Ser Val Ala
 100 105 110
 Phe Ser Ser Asp Asn Arg Gln Ile Val Ser Gly Ser Arg Asp Lys Thr
 115 120 125
 Ile Lys Leu Trp Asn Thr Leu Gly Val Cys Lys Tyr Thr Val Gln Asp
 130 135 140
 Glu Ser His Ser Glu Trp Val Ser Cys Val Arg Phe Ser Pro Asn Ser
 145 150 155 160
 Ser Asn Pro Ile Ile Val Ser Cys Gly Trp Asp Lys Leu Val Lys Val
 165 170 175
 Trp Asn Leu Ala Asn Cys Lys Leu Lys Thr Asn His Ile Gly His Thr
 180 185 190
 Gly Tyr Leu Asn Thr Val Thr Val Ser Pro Asp Gly Ser Leu Cys Ala
 195 200 205
 Ser Gly Gly Lys Asp Gly Gln Ala Met Leu Trp Asp Leu Asn Glu Gly
 210 215 220
 Lys His Leu Tyr Thr Leu Asp Gly Gly Asp Ile Ile Asn Ala Leu Cys
 225 230 235 240
 Phe Ser Pro Asn Arg Tyr Trp Leu Cys Ala Ala Thr Gly Pro Ser Ile
 245 250 255
 Lys Ile Trp Asp Leu Glu Gly Lys Ile Ile Val Asp Glu Leu Lys Gln

260	265	270
Glu Val Ile Ser Thr Ser Ser Lys Ala Glu Pro Pro Gln Cys Thr Ser		
275	280	285
Leu Ala Trp Ser Ala Asp Gly Gln Thr Leu Phe Ala Gly Tyr Thr Asp		
290	295	300
Asn Leu Val Arg Val Trp Gln Val Thr Ile Gly Thr Arg		
305	310	315

<210> 200

<211> 364

<212> DNA

<213> Mus musculus

<400> 200

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gaagtatctc aaaaagtcgc tcccgatcta ggtctcggag caaaggctga tcccgatccc 120
gctcaaaagg caggaaatcc agatcaaaga gcaaatcgaa gcccaagtct gaccggggct 180
cccattccca ctcaagaagc aggtctaagg ataagtatgg gaagtcacgt agtaggtcac 240
ggtctcggtc ccccaaagag aacggcaaag gagacataaa gtcaaagtcc agatcccgga 300
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364

<210> 201

<211> 1785

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (51).. (1580)

<400> 201

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                                     1
ggc agc tcc agg gcg cgc tgg gtg gcc ttg ggg ttg ggc gcc ctg ggg      104
Gly Ser Ser Arg Ala Arg Trp Val Ala Leu Gly Leu Gly Ala Leu Gly
      5              10              15
ctg ctg ttt gct gcg ctc ggc gtt gtc atg atc ctc atg gtg ccc tcc      152
Leu Leu Phe Ala Ala Leu Gly Val Val Met Ile Leu Met Val Pro Ser
      20              25              30
ctc atc aag cag cag gtg ctc aag aat gtc cgc ata gac ccg agc agc      200
Leu Ile Lys Gln Gln Val Leu Lys Asn Val Arg Ile Asp Pro Ser Ser
      35              40              45              50
ctg tcc ttc ggg atg tgg aag gag atc ccc gtc cct ttc tac ttg tct      248
Leu Ser Phe Gly Met Trp Lys Glu Ile Pro Val Pro Phe Tyr Leu Ser
      55              60              65
gtc tac ttc ttc gaa gtg gtc aac cca aac gag gtc ctc aac ggc cag      296
Val Tyr Phe Phe Glu Val Val Asn Pro Asn Glu Val Leu Asn Gly Gln
      70              75              80
aag cca gta gtc cgg gag cgt gga ccc tat gtc tac agg gag ttc aga      344
Lys Pro Val Val Arg Glu Arg Gly Pro Tyr Val Tyr Arg Glu Phe Arg
      85              90              95
caa aag gtc aac atc acc ttc aat gac aac gac acc gtg tcc ttc gtg      392
Gln Lys Val Asn Ile Thr Phe Asn Asp Asn Asp Thr Val Ser Phe Val
      100              105              110
gag aac cgc agc ctc cat ttc cag cct gac aag tcg cat ggc tca gag      440
Glu Asn Arg Ser Leu His Phe Gln Pro Asp Lys Ser His Gly Ser Glu

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115	120	125	130	
agt gac tac att gta ctg cct aac atc ttg gtc ctg ggg ggc tcg ata	488			
Ser Asp Tyr Ile Val Leu Pro Asn Ile Leu Val Leu Gly Gly Ser Ile				
135	140	145		
ttg atg gag agc aag cct gtg agc ctg aag ctg atg atg acc ttg gcg	536			
Leu Met Glu Ser Lys Pro Val Ser Leu Lys Leu Met Met Thr Leu Ala				
150	155	160		
ctg gtc acc atg ggc cag cgt gct ttt atg aac cgc aca gtt ggt gag	584			
Leu Val Thr Met Gly Gln Arg Ala Phe Met Asn Arg Thr Val Gly Glu				
165	170	175		
atc ctg tgg ggc tat gac gat ccc ttc gtg cat ttt ctc aac acg tac	632			
Ile Leu Trp Gly Tyr Asp Asp Pro Phe Val His Phe Leu Asn Thr Tyr				
180	185	190		
ctc cca gac atg ctt ccc ata aag ggc aaa ttt ggc ctg ttt gtt ggg	680			
Leu Pro Asp Met Leu Pro Ile Lys Gly Lys Phe Gly Leu Phe Val Gly				
195	200	205	210	
atg aac aac tcg aat tct ggg gtc ttc act gtc ttc acg ggc gtc cag	728			
Met Asn Asn Ser Asn Ser Gly Val Phe Thr Val Phe Thr Gly Val Gln				
215	220	225		
aat ttc agc agg atc cat ctg gtg gac aaa tgg aac gga ctc agc aag	776			
Asn Phe Ser Arg Ile His Leu Val Asp Lys Trp Asn Gly Leu Ser Lys				
230	235	240		
atc gat tat tgg cat tca gag cag tgt aac atg atc aat ggg act tcc	824			
Ile Asp Tyr Trp His Ser Glu Gln Cys Asn Met Ile Asn Gly Thr Ser				
245	250	255		
ggg cag atg tgg gca ccc ttc atg aca ccc gaa tcc tcg ctg gaa ttc	872			
Gly Gln Met Trp Ala Pro Phe Met Thr Pro Glu Ser Ser Leu Glu Phe				
260	265	270		
ttc agc ccg gag gca tgc agg tcc atg aag ctg acc tac aac gaa tca	920			

Phe	Ser	Pro	Glu	Ala	Cys	Arg	Ser	Met	Lys	Leu	Thr	Tyr	Asn	Glu	Ser		
275					280				285					290			
agg	gtg	ttt	gaa	ggc	att	ccc	acg	tat	cgc	ttc	acg	gcc	ccc	gat	act	968	
Arg	Val	Phe	Glu	Gly	Ile	Pro	Thr	Tyr	Arg	Phe	Thr	Ala	Pro	Asp	Thr		
			295						300					305			
ctg	ttt	gcc	aac	ggg	tcc	gtc	tac	cca	ccc	aac	gaa	ggc	ttc	tgc	cca	1016	
Leu	Phe	Ala	Asn	Gly	Ser	Val	Tyr	Pro	Pro	Asn	Glu	Gly	Phe	Cys	Pro		
			310						315					320			
tgc	cga	gag	tct	ggc	att	cag	aat	gtc	agc	acc	tgc	agg	ttt	ggt	gcg	1064	
Cys	Arg	Glu	Ser	Gly	Ile	Gln	Asn	Val	Ser	Thr	Cys	Arg	Phe	Gly	Ala		
			325						330					335			
cct	ctg	ttt	ctc	tcc	cac	ccc	cac	ttt	tac	aac	gcc	gac	cct	gtg	ttg	1112	
Pro	Leu	Phe	Leu	Ser	His	Pro	His	Phe	Tyr	Asn	Ala	Asp	Pro	Val	Leu		
			340						345					350			
tca	gaa	gct	gtt	ctt	ggt	ctg	aac	cct	aac	cca	aag	gag	cat	tcc	ttg	1160	
Ser	Glu	Ala	Val	Leu	Gly	Leu	Asn	Pro	Asn	Pro	Lys	Glu	His	Ser	Leu		
355					360									365		370	
ttc	cta	gac	atc	cat	ccg	gtc	act	ggg	atc	ccc	atg	aac	tgt	tct	gtg	1208	
Phe	Leu	Asp	Ile	His	Pro	Val	Thr	Gly	Ile	Pro	Met	Asn	Cys	Ser	Val		
					375									380		385	
aag	atg	cag	ctg	agc	ctc	tac	atc	aaa	tct	gtc	aag	ggc	atc	ggg	caa	1256	
Lys	Met	Gln	Leu	Ser	Leu	Tyr	Ile	Lys	Ser	Val	Lys	Gly	Ile	Gly	Gln		
			390											395		400	
aca	ggg	aag	atc	gag	cca	gta	gtt	ctg	ccg	ttg	ctg	tgg	ttc	gaa	cag	1304	
Thr	Gly	Lys	Ile	Glu	Pro	Val	Val	Leu	Pro	Leu	Leu	Trp	Phe	Glu	Gln		
			405											410		415	
agc	gga	gca	atg	ggt	ggc	aag	ccc	ctg	agc	acg	ttc	tac	acg	cag	ctg	1352	
Ser	Gly	Ala	Met	Gly	Gly	Lys	Pro	Leu	Ser	Thr	Phe	Tyr	Thr	Gln	Leu		
			420											425		430	

gtg ctg atg ccc cag gtt ctt cac tac gcg cag tat gtg ctg ctg ggg 1400
 Val Leu Met Pro Gln Val Leu His Tyr Ala Gln Tyr Val Leu Leu Gly
 435 440 445 450
 ctt gga ggc ctc ctg ttg ctg gtg ccc atc atc tgc caa ctg cgc agc 1448
 Leu Gly Gly Leu Leu Leu Leu Val Pro Ile Ile Cys Gln Leu Arg Ser
 455 460 465
 cag gag aaa tgc ttt ttg ttt tgg agt ggt agt aaa aag ggc tcc cag 1496
 Gln Glu Lys Cys Phe Leu Phe Trp Ser Gly Ser Lys Lys Gly Ser Gln
 470 475 480
 gat aag gag gcc att cag gcc tac tct gag tcc ctg atg tca cca gct 1544
 Asp Lys Glu Ala Ile Gln Ala Tyr Ser Glu Ser Leu Met Ser Pro Ala
 485 490 495
 gcc aag ggc acg gtg ctg caa gaa gcc aag cta tag ggtcctgaag 1590
 Ala Lys Gly Thr Val Leu Gln Glu Ala Lys Leu
 500 505 510
 acactataag ccccccaaac ctgatatgctt ggtcagacca gccaccagct ccctacaccc 1650
 cgcttcttga ggactctctc agcggacagc ccaccagtgc catggcctga gccccagat 1710
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 gaccagggac agacc 1785

<210> 202

<211> 509

<212> PRT

<213> Mus musculus

<400> 202

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35	40	45
Ser Ser Leu Ser Phe Gly Met Trp Lys Glu Ile Pro Val Pro Phe Tyr		
50	55	60
Leu Ser Val Tyr Phe Phe Glu Val Val Asn Pro Asn Glu Val Leu Asn		
65	70	75
Gly Gln Lys Pro Val Val Arg Glu Arg Gly Pro Tyr Val Tyr Arg Glu		
85	90	95
Phe Arg Gln Lys Val Asn Ile Thr Phe Asn Asp Asn Asp Thr Val Ser		
100	105	110
Phe Val Glu Asn Arg Ser Leu His Phe Gln Pro Asp Lys Ser His Gly		
115	120	125
Ser Glu Ser Asp Tyr Ile Val Leu Pro Asn Ile Leu Val Leu Gly Gly		
130	135	140
Ser Ile Leu Met Glu Ser Lys Pro Val Ser Leu Lys Leu Met Met Thr		
145	150	155
Leu Ala Leu Val Thr Met Gly Gln Arg Ala Phe Met Asn Arg Thr Val		
165	170	175
Gly Glu Ile Leu Trp Gly Tyr Asp Asp Pro Phe Val His Phe Leu Asn		
180	185	190
Thr Tyr Leu Pro Asp Met Leu Pro Ile Lys Gly Lys Phe Gly Leu Phe		
195	200	205
Val Gly Met Asn Asn Ser Asn Ser Gly Val Phe Thr Val Phe Thr Gly		
210	215	220
Val Gln Asn Phe Ser Arg Ile His Leu Val Asp Lys Trp Asn Gly Leu		
225	230	235
Ser Lys Ile Asp Tyr Trp His Ser Glu Gln Cys Asn Met Ile Asn Gly		
245	250	255

Thr Ser Gly Gln Met Trp Ala Pro Phe Met Thr Pro Glu Ser Ser Leu
 260 265 270
 Glu Phe Phe Ser Pro Glu Ala Cys Arg Ser Met Lys Leu Thr Tyr Asn
 275 280 285
 Glu Ser Arg Val Phe Glu Gly Ile Pro Thr Tyr Arg Phe Thr Ala Pro
 290 295 300
 Asp Thr Leu Phe Ala Asn Gly Ser Val Tyr Pro Pro Asn Glu Gly Phe
 305 310 315 320
 Cys Pro Cys Arg Glu Ser Gly Ile Gln Asn Val Ser Thr Cys Arg Phe
 325 330 335
 Gly Ala Pro Leu Phe Leu Ser His Pro His Phe Tyr Asn Ala Asp Pro
 340 345 350
 Val Leu Ser Glu Ala Val Leu Gly Leu Asn Pro Asn Pro Lys Glu His
 355 360 365
 Ser Leu Phe Leu Asp Ile His Pro Val Thr Gly Ile Pro Met Asn Cys
 370 375 380
 Ser Val Lys Met Gln Leu Ser Leu Tyr Ile Lys Ser Val Lys Gly Ile
 385 390 395 400
 Gly Gln Thr Gly Lys Ile Glu Pro Val Val Leu Pro Leu Leu Trp Phe
 405 410 415
 Glu Gln Ser Gly Ala Met Gly Gly Lys Pro Leu Ser Thr Phe Tyr Thr
 420 425 430
 Gln Leu Val Leu Met Pro Gln Val Leu His Tyr Ala Gln Tyr Val Leu
 435 440 445
 Leu Gly Leu Gly Gly Leu Leu Leu Leu Val Pro Ile Ile Cys Gln Leu
 450 455 460
 Arg Ser Gln Glu Lys Cys Phe Leu Phe Trp Ser Gly Ser Lys Lys Gly
 465 470 475 480
 Ser Gln Asp Lys Glu Ala Ile Gln Ala Tyr Ser Glu Ser Leu Met Ser

485 490 495
 Pro Ala Ala Lys Gly Thr Val Leu Gln Glu Ala Lys Leu
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<210> 203

<211> 1714

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (267).. (1451)

<400> 203

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 atgcagacat ccaggctgac actgttcctt tgcttgctcg cgctttcctc gcggatcgaa 180
 gagactctag ctacagcctg tggctgggaa gggagacgga ggccgcagct cagggaagat 240
 gaagctgcag tagtagcagt aggaag atg tcg ggc gaa gac gag cag cag gag 293
 Met Ser Gly Glu Asp Glu Gln Gln Glu

1

5

caa act atc gcc gag gac ctg gtc gtg acc aag tat aag atg ggg ggc 341
 Gln Thr Ile Ala Glu Asp Leu Val Val Thr Lys Tyr Lys Met Gly Gly
 10 15 20 25
 gac atc gcc aac cgg gtg ctt cga tct ttg gtg gag gct tcc agc tca 389
 Asp Ile Ala Asn Arg Val Leu Arg Ser Leu Val Glu Ala Ser Ser Ser
 30 35 40
 ggt gtg tct gtg ctg agc ttg tgt gag aaa ggt gat gcc atg att atg 437
 Gly Val Ser Val Leu Ser Leu Cys Glu Lys Gly Asp Ala Met Ile Met

45	50	55	
gaa gag aca ggg aag atc ttc aag aag gaa aag gag atg aag aaa ggt			485
Glu Glu Thr Gly Lys Ile Phe Lys Lys Glu Lys Glu Met Lys Lys Gly			
60	65	70	
att gcc ttt cct acc agc att tcc gta aat aac tgt gtg tgt cac ttc			533
Ile Ala Phe Pro Thr Ser Ile Ser Val Asn Asn Cys Val Cys His Phe			
75	80	85	
tcc cct ttg aag agt gac cag gac tat ata ctc aag gaa ggt gac ttg			581
Ser Pro Leu Lys Ser Asp Gln Asp Tyr Ile Leu Lys Glu Gly Asp Leu			
90	95	100	105
gta aaa att gac ctt ggg gtt cat gtg gat ggc ttc att gcc aat gtg			629
Val Lys Ile Asp Leu Gly Val His Val Asp Gly Phe Ile Ala Asn Val			
110	115	120	
gct cac act ttt gta att ggt gta gct cag ggg acc cag gta aca ggg			677
Ala His Thr Phe Val Ile Gly Val Ala Gln Gly Thr Gln Val Thr Gly			
125	130	135	
cgg aaa gca gat gtc att aag gcc gct cac cta tgt gct gaa gct gcc			725
Arg Lys Ala Asp Val Ile Lys Ala Ala His Leu Cys Ala Glu Ala Ala			
140	145	150	
tta cga ctg gtc aaa cct gga aac cag aac aca caa gtg act gaa gca			773
Leu Arg Leu Val Lys Pro Gly Asn Gln Asn Thr Gln Val Thr Glu Ala			
155	160	165	
tgg aac aag gtt gct cac tca ttt aac tgc aca cca ata gaa ggt atg			821
Trp Asn Lys Val Ala His Ser Phe Asn Cys Thr Pro Ile Glu Gly Met			
170	175	180	185
ctg tca cac caa ttg aag cag cat gtg att gat gga gag aag acg att			869
Leu Ser His Gln Leu Lys Gln His Val Ile Asp Gly Glu Lys Thr Ile			
190	195	200	
atc cag aac cct aca gac cag cag aag aag gac cat gaa aag gca gaa			917

535/2644

gca agt aga aaa acc cag aaa aag aag aaa aag aag gcc tcc aag act 1397
 Ala Ser Arg Lys Thr Gln Lys Lys Lys Lys Lys Lys Ala Ser Lys Thr
 365 370 375
 gta gag aat gcc acc agt gga gaa acc tta gaa gag aat gga gct ggg 1445
 Val Glu Asn Ala Thr Ser Gly Glu Thr Leu Glu Glu Asn Gly Ala Gly
 380 385 390
 gac tga ggigggtccc ctcccagct tgcatctct gccacccc ctcccaccgc 1501
 Asp
 395
 accccaggct ctgtcaagtc gagtcgtct tctccacca agactaccag cagagcgggg 1561
 ggctttcagc cctcatcccg gtccccaacc caccaccca ctctttcaa caaaaaacca 1621
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 tagaaaagaa attgaataat aaaatcagga gtc 1714

<210> 204

<211> 394

<212> PRT

<213> Mus musculus

<400> 204

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 20 25 30
 Arg Ser Leu Val Glu Ala Ser Ser Ser Gly Val Ser Val Leu Ser Leu
 35 40 45
 Cys Glu Lys Gly Asp Ala Met Ile Met Glu Glu Thr Gly Lys Ile Phe
 50 55 60
 Lys Lys Glu Lys Glu Met Lys Lys Gly Ile Ala Phe Pro Thr Ser Ile

65		70		75		80
Ser Val Asn Asn Cys Val Cys His Phe Ser Pro Leu Lys Ser Asp Gln						
	85		90		95	
Asp Tyr Ile Leu Lys Glu Gly Asp Leu Val Lys Ile Asp Leu Gly Val						
	100		105		110	
His Val Asp Gly Phe Ile Ala Asn Val Ala His Thr Phe Val Ile Gly						
	115		120		125	
Val Ala Gln Gly Thr Gln Val Thr Gly Arg Lys Ala Asp Val Ile Lys						
	130		135		140	
Ala Ala His Leu Cys Ala Glu Ala Ala Leu Arg Leu Val Lys Pro Gly						
145		150		155		160
Asn Gln Asn Thr Gln Val Thr Glu Ala Trp Asn Lys Val Ala His Ser						
	165		170		175	
Phe Asn Cys Thr Pro Ile Glu Gly Met Leu Ser His Gln Leu Lys Gln						
	180		185		190	
His Val Ile Asp Gly Glu Lys Thr Ile Ile Gln Asn Pro Thr Asp Gln						
	195		200		205	
Gln Lys Lys Asp His Glu Lys Ala Glu Phe Glu Val His Glu Val Tyr						
	210		215		220	
Ala Val Asp Val Leu Val Ser Ser Gly Glu Gly Lys Ala Lys Asp Ala						
225		230		235		240
Gly Gln Arg Thr Thr Ile Tyr Lys Arg Asp Pro Ser Lys Gln Tyr Gly						
	245		250		255	
Leu Lys Met Lys Thr Ser Arg Ala Phe Phe Ser Glu Val Glu Arg Arg						
	260		265		270	
Phe Asp Ala Met Pro Phe Thr Leu Arg Ala Phe Glu Asp Glu Lys Lys						
	275		280		285	
Ala Arg Met Gly Val Val Glu Cys Ala Lys His Glu Leu Leu Gln Pro						
	290		295		300	

Phe Asn Val Leu Tyr Glu Lys Glu Gly Glu Phe Val Ala Gln Phe Lys
 305 310 315 320
 Phe Thr Val Leu Leu Met Pro Asn Gly Pro Met Arg Ile Thr Ser Gly
 325 330 335
 Pro Phe Glu Pro Asp Leu Tyr Lys Ser Glu Met Glu Val Gln Asp Ala
 340 345 350
 Glu Leu Lys Ala Leu Leu Gln Ser Ser Ala Ser Arg Lys Thr Gln Lys
 355 360 365
 Lys Lys Lys Lys Lys Ala Ser Lys Thr Val Glu Asn Ala Thr Ser Gly
 370 375 380
 Glu Thr Leu Glu Glu Asn Gly Ala Gly Asp
 385 390

<210> 205

<211> 512

<212> DNA

<213> Mus musculus

<400> 205

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 attaccgaag acitttgtcg gcacgctact tggagtaccg gaggataccc cacaccgatc 180
 ctgtggacta tgaattacag tggggcccgc gaaccaacct ggaaaccagc aagatgaaag 240
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 gcgaggcttt ggcagatgag gagagtaggg ctagacctgc aactgctagt gccccagcca 360
 catcctcttg aactctttga gttatggctt gagggactct ggagatccag tataaaagaa 420
 cagggggaat gggggtcgga ggaagcttga ttctgctacg cataaaggcc ttggagcggt 480
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<210> 206

<211> 961

<212> DNA

<213> *Mus musculus*

<220>

<221> CDS

<222> (90).. (605)

<400> 206

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cgcaaaggga agaaaagcaa aagacgaaa atg gct aaa ttt aag atc cgt cca 113

Met Ala Lys Phe Lys Ile Arg Pro

1

5

gcc act gcc tct gac tgc agt gac atc ctg cga ctg atc aag gaa ctg 161

Ala Thr Ala Ser Asp Cys Ser Asp Ile Leu Arg Leu Ile Lys Glu Leu

10

15

20

gct aaa tat gaa tac atg gaa gat caa gtc att tta act gag aaa gat 209

Ala Lys Tyr Glu Tyr Met Glu Asp Gln Val Ile Leu Thr Glu Lys Asp

25

30

35

40

ctc caa gag gat ggc ttt gga gaa cac ccc ttc tac cac tgc ctg gtt 257

Leu Gln Glu Asp Gly Phe Gly Glu His Pro Phe Tyr His Cys Leu Val

45

50

55

gca gaa gtg cct aaa gag cac tgg acc cct gaa gga cat agc att gtt 305

Ala Glu Val Pro Lys Glu His Trp Thr Pro Glu Gly His Ser Ile Val

60

65

70

ggg ttc gcc atg tac tat ttt acc tat gac cca tgg att ggc aag ttg 353

Gly Phe Ala Met Tyr Tyr Phe Thr Tyr Asp Pro Trp Ile Gly Lys Leu

75

80

85

ctg tat ctt gaa gac ttc ttc gtg atg agt gat tac aga ggc ttt ggt 401
 Leu Tyr Leu Glu Asp Phe Phe Val Met Ser Asp Tyr Arg Gly Phe Gly
 90 95 100
 ata gga tca gaa att ttg aag aat cta agc cag gtt gcc atg aag tgt 449
 Ile Gly Ser Glu Ile Leu Lys Asn Leu Ser Gln Val Ala Met Lys Cys
 105 110 115 120
 cgc tgc agc agt atg cac ttc ttg gta gca gaa tgg aat gaa cca tct 497
 Arg Cys Ser Ser Met His Phe Leu Val Ala Glu Trp Asn Glu Pro Ser
 125 130 135
 atc aac ttc tac aaa aga aga ggt gct tgc gat ctg tcc agt gaa gag 545
 Ile Asn Phe Tyr Lys Arg Arg Gly Ala Ser Asp Leu Ser Ser Glu Glu
 140 145 150
 gga tgg agg ctc ttc aag att gac aaa gag tac ttg cta aaa atg gca 593
 Gly Trp Arg Leu Phe Lys Ile Asp Lys Glu Tyr Leu Leu Lys Met Ala
 155 160 165
 gca gag gag tga ggcgtgccgg ttagacaat gacaacctcc attgtgcttt 645
 Ala Glu Glu
 170
 agaataattc tcagcttccc ttgctttcta tcttggtgt agtgaaataa tagagcgagc 705
 acccattcca aagctttatt accagtgacg ttgttgcatg ttgaaattc ggtctgttta 765
 aagtggcagt catgtatgtg gtttggaggc agaattcttg aacatctttt gatgaagaac 825
 aaggtggtat gatcttacta tataagaaaa acaaaacttc attcttgtga gtcattitaaa 885
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 actcgctctt tgattt 961

<210> 207

<211> 171

<212> PRT

<213> Mus musculus

<400> 207

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 Ile Leu Arg Leu Ile Lys Glu Leu Ala Lys Tyr Glu Tyr Met Glu Asp
 20 25 30
 Gln Val Ile Leu Thr Glu Lys Asp Leu Gln Glu Asp Gly Phe Gly Glu
 35 40 45
 His Pro Phe Tyr His Cys Leu Val Ala Glu Val Pro Lys Glu His Trp
 50 55 60
 Thr Pro Glu Gly His Ser Ile Val Gly Phe Ala Met Tyr Tyr Phe Thr
 65 70 75 80
 Tyr Asp Pro Trp Ile Gly Lys Leu Leu Tyr Leu Glu Asp Phe Phe Val
 85 90 95
 Met Ser Asp Tyr Arg Gly Phe Gly Ile Gly Ser Glu Ile Leu Lys Asn
 100 105 110
 Leu Ser Gln Val Ala Met Lys Cys Arg Cys Ser Ser Met His Phe Leu
 115 120 125
 Val Ala Glu Trp Asn Glu Pro Ser Ile Asn Phe Tyr Lys Arg Arg Gly
 130 135 140
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 Lys Glu Tyr Leu Leu Lys Met Ala Ala Glu Glu
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<211> 2740

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (54).. (791)

<400> 208

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gat aaa aat gag ctg gtg cag aag gcc aag ctg gcc gag cag gca gag      104
Asp Lys Asn Glu Leu Val Gln Lys Ala Lys Leu Ala Glu Gln Ala Glu
           5                10                15
cga tat gat gac atg gca gcc tgc atg aag tct gtc act gag cag gga      152
Arg Tyr Asp Asp Met Ala Ala Cys Met Lys Ser Val Thr Glu Gln Gly
           20                25                30
gct gag ctg tcg aat gag gag aga aac ctt ctc tct gtt gct tat aaa      200
Ala Glu Leu Ser Asn Glu Glu Arg Asn Leu Leu Ser Val Ala Tyr Lys
           35                40                45
aac gtt gta gga gcc cgt agg tca tcg tgg agg gtc gtc tca agt att      248
Asn Val Val Gly Ala Arg Arg Ser Ser Trp Arg Val Val Ser Ser Ile
           50                55                60                65
gag cag aag acg gaa ggt gct gag aaa aag cag cag atg gct cga gaa      296
Glu Gln Lys Thr Glu Gly Ala Glu Lys Lys Gln Gln Met Ala Arg Glu
           70                75                80
tac aga gag aag atc gag acg gag ctg cgt gac atc tgc aac gat gta      344
Tyr Arg Glu Lys Ile Glu Thr Glu Leu Arg Asp Ile Cys Asn Asp Val
           85                90                95
ctg tct ctt ttg gaa aag ttc ttg atc ccc aat gct tcg caa cca gaa      392
Leu Ser Leu Leu Glu Lys Phe Leu Ile Pro Asn Ala Ser Gln Pro Glu

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gcc gag gtt gct gct ggt gat gac aag aaa gga att gtg gac cag tca	488		
Ala Glu Val Ala Ala Gly Asp Asp Lys Lys Gly Ile Val Asp Gln Ser			
130	135	140	145
cag caa gca tac caa gaa gca ttt gaa atc agc aaa aag gag atg cag	536		
Gln Gln Ala Tyr Gln Glu Ala Phe Glu Ile Ser Lys Lys Glu Met Gln			
150	155	160	
ccg aca cac ccc atc aga ctg ggt ctg gcc ctc aac ttc tct gtg ttc	584		
Pro Thr His Pro Ile Arg Leu Gly Leu Ala Leu Asn Phe Ser Val Phe			
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tat tac gag atc ctg aac tcc cca gag aaa gcc tgc tct ctt gca aaa	632		
Tyr Tyr Glu Ile Leu Asn Ser Pro Glu Lys Ala Cys Ser Leu Ala Lys			
180	185	190	
aca gct ttc gat gaa gcc att gct gaa ctt gat aca tta agt gaa gag	680		
Thr Ala Phe Asp Glu Ala Ile Ala Glu Leu Asp Thr Leu Ser Glu Glu			
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Ser Tyr Lys Asp Ser Thr Leu Ile Met Gln Leu Leu Arg Asp Asn Leu			
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230	235	240	
gga ggg gaa aat taa ccggccttcc aacctttgtc tgcctcattc taaaatttac	831		
Gly Gly Glu Asn			
245			
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<211> 245

<212> PRT

<213> Mus musculus

<400> 209

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				20					25					30	
Gly	Ala	Glu	Leu	Ser	Asn	Glu	Glu	Arg	Asn	Leu	Leu	Ser	Val	Ala	Tyr
				35					40					45	
Lys	Asn	Val	Val	Gly	Ala	Arg	Arg	Ser	Ser	Trp	Arg	Val	Val	Ser	Ser
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Ile	Glu	Gln	Lys	Thr	Glu	Gly	Ala	Glu	Lys	Lys	Gln	Gln	Met	Ala	Arg
				65					70					75	
Glu	Tyr	Arg	Glu	Lys	Ile	Glu	Thr	Glu	Leu	Arg	Asp	Ile	Cys	Asn	Asp
				85					90					95	
Val	Leu	Ser	Leu	Leu	Glu	Lys	Phe	Leu	Ile	Pro	Asn	Ala	Ser	Gln	Pro
				100					105					110	
Glu	Ser	Lys	Val	Phe	Tyr	Leu	Lys	Met	Lys	Gly	Asp	Tyr	Tyr	Arg	Tyr
				115					120					125	
Leu	Ala	Glu	Val	Ala	Ala	Gly	Asp	Asp	Lys	Lys	Gly	Ile	Val	Asp	Gln
				130					135					140	
Ser	Gln	Gln	Ala	Tyr	Gln	Glu	Ala	Phe	Glu	Ile	Ser	Lys	Lys	Glu	Met
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Gln Pro Thr His Pro Ile Arg Leu Gly Leu Ala Leu Asn Phe Ser Val
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 Phe Tyr Tyr Glu Ile Leu Asn Ser Pro Glu Lys Ala Cys Ser Leu Ala
 180 185 190
 Lys Thr Ala Phe Asp Glu Ala Ile Ala Glu Leu Asp Thr Leu Ser Glu
 195 200 205
 Glu Ser Tyr Lys Asp Ser Thr Leu Ile Met Gln Leu Leu Arg Asp Asn
 210 215 220
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<211> 2643

<212> DNA

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<220>

<221> CDS

<222> (148).. (1518)

<400> 210

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 cgacaggtct tctacttaca aaggaca atg act act gat gag ggc acc agt aac 174
 Met Thr Thr Asp Glu Gly Thr Ser Asn
 1 5
 aat gga gag aac cca gca gcc acc atg act gag cag ggt gaa gat atc 222

Asn Gly Glu Asn Pro Ala Ala Thr Met Thr Glu Gln Gly Glu Asp Ile
 10 15 20 25
 act acg aag aaa gac aga gga gta tta aag att gtc aaa aga gtg ggg 270
 Thr Thr Lys Lys Asp Arg Gly Val Leu Lys Ile Val Lys Arg Val Gly
 30 35 40
 act agt gac gag gcc cca atg ttt ggt gac aaa gtt tat gtc cac tac 318
 Thr Ser Asp Glu Ala Pro Met Phe Gly Asp Lys Val Tyr Val His Tyr
 45 50 55
 aaa ggg atg ttg tca gat gga aag aag ttt gat tcc agt cat gac aga 366
 Lys Gly Met Leu Ser Asp Gly Lys Lys Phe Asp Ser Ser His Asp Arg
 60 65 70
 aag aag cca ttt gcc ttt agc ctt ggc caa ggc cag gtt atc aaa gcc 414
 Lys Lys Pro Phe Ala Phe Ser Leu Gly Gln Gly Gln Val Ile Lys Ala
 75 80 85
 tgg gac att ggg gtg tct act atg aag aaa ggc gag atc tgc cat tta 462
 Trp Asp Ile Gly Val Ser Thr Met Lys Lys Gly Glu Ile Cys His Leu
 90 95 100 105
 tta tgt aaa cca gaa tat gct tat ggc tgc gct ggc cac ctc caa aaa 510
 Leu Cys Lys Pro Glu Tyr Ala Tyr Gly Ser Ala Gly His Leu Gln Lys
 110 115 120
 att cca tca aat gca act ctc ttt ttt gag att gag ctc ctt gat ttc 558
 Ile Pro Ser Asn Ala Thr Leu Phe Phe Glu Ile Glu Leu Leu Asp Phe
 125 130 135
 aaa ggt gag gat tta ttt gaa gat tca ggc gtt atc cgt aga atc aaa 606
 Lys Gly Glu Asp Leu Phe Glu Asp Ser Gly Val Ile Arg Arg Ile Lys
 140 145 150
 cgg aaa ggc gag gga tac tca aac cca aac gaa gga gca acg gta aaa 654
 Arg Lys Gly Glu Gly Tyr Ser Asn Pro Asn Glu Gly Ala Thr Val Lys
 155 160 165

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gtc cac ctg gaa ggc tgc tgt ggt gga agg aca ttt gat tgc cga gat 702
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170                175                180                185
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Val Val Phe Val Val Gly Glu Gly Glu Asp His Asp Ile Pro Ile Gly
190                195                200
atc gac aaa gcc ctg gtg aag atg cag aga gaa gaa cag tgt att cta 798
Ile Asp Lys Ala Leu Val Lys Met Gln Arg Glu Glu Gln Cys Ile Leu
205                210                215
tat ctt gga cca cgc tat ggt ttt gga gaa gcc ggg aag cct aag ttt 846
Tyr Leu Gly Pro Arg Tyr Gly Phe Gly Glu Ala Gly Lys Pro Lys Phe
220                225                230
ggc att gac ccc aat gct gag ctt atg tac gag gtc acc ctt aag agc 894
Gly Ile Asp Pro Asn Ala Glu Leu Met Tyr Glu Val Thr Leu Lys Ser
235                240                245
ttc gag aag gcc aaa gaa tct tgg gag atg gac acc aaa gaa aag ctg 942
Phe Glu Lys Ala Lys Glu Ser Trp Glu Met Asp Thr Lys Glu Lys Leu
250                255                260                265
acg cag gct gcc atc gtg aaa gag aag gga act gtg tac ttc aag gga 990
Thr Gln Ala Ala Ile Val Lys Glu Lys Gly Thr Val Tyr Phe Lys Gly
270                275                280
ggc aag tac acg cag gcc gtg att cag tac agg aag ata gtg tcc tgg 1038
Gly Lys Tyr Thr Gln Ala Val Ile Gln Tyr Arg Lys Ile Val Ser Trp
285                290                295
ctg gag atg gaa tac ggc ctg tca gag aag gag tcc aaa gcc tca gag 1086
Leu Glu Met Glu Tyr Gly Leu Ser Glu Lys Glu Ser Lys Ala Ser Glu
300                305                310
tcg ttc ctc ctc gca gcc ttc ctg aac ctg gcc atg tgc tac ctg aag 1134
Ser Phe Leu Leu Ala Ala Phe Leu Asn Leu Ala Met Cys Tyr Leu Lys

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315	320	325	
ctc cga gag tac aac aaa gcc gig gag tgc tgc gac aag gcc ctt gga			1182
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ctg gac agt gcc aat gag aaa ggc ttg tac aga agg ggc gag gcc cag			1230
Leu Asp Ser Ala Asn Glu Lys Gly Leu Tyr Arg Arg Gly Glu Ala Gln			
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ctg ctc atg aat gac ttt gag tgc gcc aag ggc gac ttc gag aag gtg			1278
Leu Leu Met Asn Asp Phe Glu Ser Ala Lys Gly Asp Phe Glu Lys Val			
	365	370	375
ttg gca gtc aat cct cag aac agg gcc gct cgc ctg cag atc tcc atg			1326
Leu Ala Val Asn Pro Gln Asn Arg Ala Ala Arg Leu Gln Ile Ser Met			
	380	385	390
tgc cag agg aag gcg aag gag cac aac gag cgg gac cgc agg gtg tac			1374
Cys Gln Arg Lys Ala Lys Glu His Asn Glu Arg Asp Arg Arg Val Tyr			
	395	400	405
gcc aac atg ttc aag aag ttc gca gag cgg gac gca aag gag gaa gcc			1422
Ala Asn Met Phe Lys Lys Phe Ala Glu Arg Asp Ala Lys Glu Glu Ala			
410	415	420	425
agc aaa gct ggg agc aag aag gct gta gaa gga gcc gct ggc aaa caa			1470
Ser Lys Ala Gly Ser Lys Lys Ala Val Glu Gly Ala Ala Gly Lys Gln			
	430	435	440
cac gag agt cag gcc atg gaa gaa gga aag gcc aaa ggc cat gta tga			1518
His Glu Ser Gln Ala Met Glu Glu Gly Lys Ala Lys Gly His Val			
	445	450	455
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ccaactcagg actgaacagt gtttagtgta aggtttgtta cagtctctgt gattctggaa			1638
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<211> 456

<212> PRT

<213> Mus musculus

<400> 211

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					20				25				30		
Val	Leu	Lys	Ile	Val	Lys	Arg	Val	Gly	Thr	Ser	Asp	Glu	Ala	Pro	Met
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Phe	Gly	Asp	Lys	Val	Tyr	Val	His	Tyr	Lys	Gly	Met	Leu	Ser	Asp	Gly

50	55	60	
Lys Lys Phe Asp Ser Ser His Asp Arg Lys Lys Pro Phe Ala Phe Ser			
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Leu Gly Gln Gly Gln Val Ile Lys Ala Trp Asp Ile Gly Val Ser Thr			
	85	90	95
Met Lys Lys Gly Glu Ile Cys His Leu Leu Cys Lys Pro Glu Tyr Ala			
100	105	110	
Tyr Gly Ser Ala Gly His Leu Gln Lys Ile Pro Ser Asn Ala Thr Leu			
115	120	125	
Phe Phe Glu Ile Glu Leu Leu Asp Phe Lys Gly Glu Asp Leu Phe Glu			
130	135	140	
Asp Ser Gly Val Ile Arg Arg Ile Lys Arg Lys Gly Glu Gly Tyr Ser			
145	150	155	160
Asn Pro Asn Glu Gly Ala Thr Val Lys Val His Leu Glu Gly Cys Cys			
	165	170	175
Gly Gly Arg Thr Phe Asp Cys Arg Asp Val Val Phe Val Val Gly Glu			
180	185	190	
Gly Glu Asp His Asp Ile Pro Ile Gly Ile Asp Lys Ala Leu Val Lys			
195	200	205	
Met Gln Arg Glu Glu Gln Cys Ile Leu Tyr Leu Gly Pro Arg Tyr Gly			
210	215	220	
Phe Gly Glu Ala Gly Lys Pro Lys Phe Gly Ile Asp Pro Asn Ala Glu			
225	230	235	240
Leu Met Tyr Glu Val Thr Leu Lys Ser Phe Glu Lys Ala Lys Glu Ser			
	245	250	255
Trp Glu Met Asp Thr Lys Glu Lys Leu Thr Gln Ala Ala Ile Val Lys			
260	265	270	
Glu Lys Gly Thr Val Tyr Phe Lys Gly Gly Lys Tyr Thr Gln Ala Val			
275	280	285	

Ile Gln Tyr Arg Lys Ile Val Ser Trp Leu Glu Met Glu Tyr Gly Leu
290 295 300
Ser Glu Lys Glu Ser Lys Ala Ser Glu Ser Phe Leu Leu Ala Ala Phe
305 310 315 320
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325 330 335
Val Glu Cys Cys Asp Lys Ala Leu Gly Leu Asp Ser Ala Asn Glu Lys
340 345 350
Gly Leu Tyr Arg Arg Gly Glu Ala Gln Leu Leu Met Asn Asp Phe Glu
355 360 365
Ser Ala Lys Gly Asp Phe Glu Lys Val Leu Ala Val Asn Pro Gln Asn
370 375 380
Arg Ala Ala Arg Leu Gln Ile Ser Met Cys Gln Arg Lys Ala Lys Glu
385 390 395 400
His Asn Glu Arg Asp Arg Arg Val Tyr Ala Asn Met Phe Lys Lys Phe
405 410 415
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<211> 510

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<213> Mus musculus

<400> 212

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<211> 405

<212> DNA

<213> Mus musculus

<400> 213

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 tgcttctgaa aattctcct gctggatga ccaatgatg gacgcttaag ttgtggccc 240
 gaactaccta gaacaacccg caatactgga gtaacggct ctaaaccat tgcagagata 300
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<210> 214

<211> 489

<212> DNA

<213> Mus musculus

<400> 214

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 gacaaggctt taactgaaga ggaattgaaa gcagctcaga catccgttgc atatggctgc 180
 atcaaatacg ccgacctttc tcataatcgc ctcaatgact acatcttctc ctttgacaag 240
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<211> 886

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<400> 215

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 gaa gcg agt aag aat gaa act ggt ggt gga gaa gga atc gaa gtc ctg 148
 Glu Ala Ser Lys Asn Glu Thr Gly Gly Gly Glu Gly Ile Glu Val Leu

30	35	40	
aag aat gaa cct tac gaa aac gat ggc gag aag gga cag tac aca cac	196		
Lys Asn Glu Pro Tyr Glu Asn Asp Gly Glu Lys Gly Gln Tyr Thr His			
45	50	55	
aaa atc tac cac ctg aag agc aaa gtt cct gca ttt gtg agg atg att	244		
Lys Ile Tyr His Leu Lys Ser Lys Val Pro Ala Phe Val Arg Met Ile			
60	65	70	75
gct ccg gag ggc tcc ctg gtg ttt cat gag aaa gcc tgg aat gcc tac	292		
Ala Pro Glu Gly Ser Leu Val Phe His Glu Lys Ala Trp Asn Ala Tyr			
80	85	90	
ccc tac tgc aga aca att gta acg aat gaa tac atg aaa gat gac ttc	340		
Pro Tyr Cys Arg Thr Ile Val Thr Asn Glu Tyr Met Lys Asp Asp Phe			
95	100	105	
ttc atc aaa att gaa aca tgg cac aaa cct gac ttg gga aca tta gaa	388		
Phe Ile Lys Ile Glu Thr Trp His Lys Pro Asp Leu Gly Thr Leu Glu			
110	115	120	
aat gtt cac ggt tta gat ccc aac act tgg aaa act gtt gaa ata gtc	436		
Asn Val His Gly Leu Asp Pro Asn Thr Trp Lys Thr Val Glu Ile Val			
125	130	135	
cac ata gac att gca gat cga agt caa gtt gaa cca gca gac tac aaa	484		
His Ile Asp Ile Ala Asp Arg Ser Gln Val Glu Pro Ala Asp Tyr Lys			
140	145	150	155
gct gat gaa gac cct gca tta ttc cat tca gtc aag acc aag aga gga	532		
Ala Asp Glu Asp Pro Ala Leu Phe His Ser Val Lys Thr Lys Arg Gly			
160	165	170	
ccc ctg gga cct aac tgg aag aag gag ctg gca aac acc cct gac tgt	580		
Pro Leu Gly Pro Asn Trp Lys Lys Glu Leu Ala Asn Thr Pro Asp Cys			
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cct agg atg tgt gcc tat aag ctg gtg acc atc aag ttc aag tgg tgg	628		

Pro Arg Met Cys Ala Tyr Lys Leu Val Thr Ile Lys Phe Lys Trp Trp
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 Gly Leu Gln Ser Lys Val Glu Asn Phe Ile Gln Lys Gln Glu Lys Arg
 205 210 215
 ata ttt acg aac tta cat cgc cag ctc ttt tgt tgg att gac aag tgg 724
 Ile Phe Thr Asn Leu His Arg Gln Leu Phe Cys Trp Ile Asp Lys Trp
 220 225 230 235
 att gac ctg aca atg gaa gac att agg cga atg gag gat gag act cag 772
 Ile Asp Leu Thr Met Glu Asp Ile Arg Arg Met Glu Asp Glu Thr Gln
 240 245 250
 aaa gaa cta gaa aca atg cgt aag aag ggt tcc gtc cga ggc acg tcg 820
 Lys Glu Leu Glu Thr Met Arg Lys Lys Gly Ser Val Arg Gly Thr Ser
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 Ala Ala Asp Ala
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<212> PRT

<213> Mus musculus

<400> 216

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 Glu Asn Asp Gly Glu Lys Gly Gln Tyr Thr His Lys Ile Tyr His Leu
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 Lys Ser Lys Val Pro Ala Phe Val Arg Met Ile Ala Pro Glu Gly Ser
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 Leu Val Phe His Glu Lys Ala Trp Asn Ala Tyr Pro Tyr Cys Arg Thr
 85 90 95
 Ile Val Thr Asn Glu Tyr Met Lys Asp Asp Phe Phe Ile Lys Ile Glu
 100 105 110
 Thr Trp His Lys Pro Asp Leu Gly Thr Leu Glu Asn Val His Gly Leu
 115 120 125
 Asp Pro Asn Thr Trp Lys Thr Val Glu Ile Val His Ile Asp Ile Ala
 130 135 140
 Asp Arg Ser Gln Val Glu Pro Ala Asp Tyr Lys Ala Asp Glu Asp Pro
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 Ala Leu Phe His Ser Val Lys Thr Lys Arg Gly Pro Leu Gly Pro Asn
 165 170 175
 Trp Lys Lys Glu Leu Ala Asn Thr Pro Asp Cys Pro Arg Met Cys Ala
 180 185 190
 Tyr Lys Leu Val Thr Ile Lys Phe Lys Trp Trp Gly Leu Gln Ser Lys
 195 200 205
 Val Glu Asn Phe Ile Gln Lys Gln Glu Lys Arg Ile Phe Thr Asn Leu
 210 215 220
 His Arg Gln Leu Phe Cys Trp Ile Asp Lys Trp Ile Asp Leu Thr Met
 225 230 235 240
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 Met Arg Lys Lys Gly Ser Val Arg Gly Thr Ser Ala Ala Asp Ala

260

265

270

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<211> 3652

<212> DNA

<213> Mus musculus

<220>

<221> CDS

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<400> 217

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 gctaaatgac aggatgcagg cgacttgaga cacaaaaaga gaagcgcttc tcgcgaattc 180
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 ggcggactta agagcgcttc ggattgttaa gattatcggt tgcctggttt tcgtccgcgc 300
 aatcggttc tctgcggct gccctggggac tggcttggcg aaggagg atg gag agg 356

Met Glu Arg

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ggg ctg ccg ttg ctg tgc gcc acg ctc gcc ctt gcc ctc gcc ctg gcg 404
 Gly Leu Pro Leu Leu Cys Ala Thr Leu Ala Leu Ala Leu Ala

5

10

15

ggc gct ttc cgc agc gac aaa tgt ggc ggg acc ata aaa atc gaa aac 452
 Gly Ala Phe Arg Ser Asp Lys Cys Gly Gly Thr Ile Lys Ile Glu Asn

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25

30

35

cca ggg tac ctc aca tct ccc ggt tac cct cat tct tac cat cca agt 500
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40

45

50

gag aag tgt gaa tgg cta atc caa gct ccg gaa ccc tac cag aga atc 548
 Glu Lys Cys Glu Trp Leu Ile Gln Ala Pro Glu Pro Tyr Gln Arg Ile
 55 60 65
 ata atc aac ttc aac cca cat ttc gat ttg gag gac aga gac tgc aag 596
 Ile Ile Asn Phe Asn Pro His Phe Asp Leu Glu Asp Arg Asp Cys Lys
 70 75 80
 tat gac tac gtg gaa gta att gat ggg gag aat gaa ggc ggc cgc ctg 644
 Tyr Asp Tyr Val Glu Val Ile Asp Gly Glu Asn Glu Gly Gly Arg Leu
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 Trp Gly Lys Phe Cys Gly Lys Ile Ala Pro Ser Pro Val Val Ser Ser
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 Gly Pro Phe Leu Phe Ile Lys Phe Val Ser Asp Tyr Glu Thr His Gly
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 Ala Gly Phe Ser Ile Arg Tyr Glu Ile Phe Lys Arg Gly Pro Glu Cys
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 Ser Gln Asn Tyr Thr Ala Pro Thr Gly Val Ile Lys Ser Pro Gly Phe
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 Pro Glu Lys Tyr Pro Asn Cys Leu Glu Cys Thr Tyr Ile Ile Phe Ala
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 Pro Lys Met Ser Glu Ile Ile Leu Glu Phe Glu Ser Phe Asp Leu Glu
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 caa gac tcg aat cct ccc gga gga atg ttc tgt cgc tat gac cgg ctg 980
 Gln Asp Ser Asn Pro Pro Gly Gly Met Phe Cys Arg Tyr Asp Arg Leu

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Glu Ile Trp Asp Gly Phe Pro Glu Val Gly Pro His Ile Gly Arg Tyr			
215	220	225	
tgt ggg cag aaa act cct ggc cgg atc cgc tcc tct tca ggc gtt cta			1076
Cys Gly Gln Lys Thr Pro Gly Arg Ile Arg Ser Ser Ser Gly Val Leu			
230	235	240	
tcc atg gtc ttt tac act gac agc gca ata gca aaa gaa ggt ttc tca			1124
Ser Met Val Phe Tyr Thr Asp Ser Ala Ile Ala Lys Glu Gly Phe Ser			
245	250	255	
gcc aac tac agt gtg cta cag agc agc atc tct gaa gat ttt aag tgt			1172
Ala Asn Tyr Ser Val Leu Gln Ser Ser Ile Ser Glu Asp Phe Lys Cys			
260	265	270	275
atg gag gct ctg ggc atg gaa tct gga gag atc cat tct gat cag atc			1220
Met Glu Ala Leu Gly Met Glu Ser Gly Glu Ile His Ser Asp Gln Ile			
280	285	290	
act gca tct tca cag tat ggt acc aac tgg tct gta gag cgc tcc cgc			1268
Thr Ala Ser Ser Gln Tyr Gly Thr Asn Trp Ser Val Glu Arg Ser Arg			
295	300	305	
ctg aac tac cct gaa aat ggg tgg act cca gga gaa gac tcc tac aag			1316
Leu Asn Tyr Pro Glu Asn Gly Trp Thr Pro Gly Glu Asp Ser Tyr Lys			
310	315	320	
gag tgg atc cag gtg gac ttg ggc ctc ctg cga ttc gtt act gct gta			1364
Glu Trp Ile Gln Val Asp Leu Gly Leu Leu Arg Phe Val Thr Ala Val			
325	330	335	
ggg aca cag ggt gcc att tcc aag gaa acc aag aag aaa tat tat gtc			1412
Gly Thr Gln Gly Ala Ile Ser Lys Glu Thr Lys Lys Lys Tyr Tyr Val			
340	345	350	355
aag act tac aga gta gac atc agc tcc aac gga gag gac tgg atc tcc			1460

Lys Thr Tyr Arg Val Asp Ile Ser Ser Asn Gly Glu Asp Trp Ile Ser
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 Leu Lys Glu Gly Asn Lys Ala Ile Ile Phe Gln Gly Asn Thr Asn Pro
 375 380 385
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 Thr Asp Val Val Leu Gly Val Phe Ser Lys Pro Leu Ile Thr Arg Phe
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 gtc cga atc aaa cct gta tcc tgg gaa act ggt ata tct atg aga ttt 1604
 Val Arg Ile Lys Pro Val Ser Trp Glu Thr Gly Ile Ser Met Arg Phe
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 Glu Val Tyr Gly Cys Lys Ile Thr Asp Tyr Pro Cys Ser Gly Met Leu
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 ggc atg gtg tct gga ctt att tca gac tcc cag att aca gca tcc aat 1700
 Gly Met Val Ser Gly Leu Ile Ser Asp Ser Gln Ile Thr Ala Ser Asn
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 Gln Ala Asp Arg Asn Trp Met Pro Glu Asn Ile Arg Leu Val Thr Ser
 455 460 465
 cgt acc ggc tgg gca ctg cca ccc tca ccc cac cca tac acc aat gaa 1796
 Arg Thr Gly Trp Ala Leu Pro Pro Ser Pro His Pro Tyr Thr Asn Glu
 470 475 480
 tgg ctc caa gtg gac ctg gga gat gag aag ata gta aga ggt gtc atc 1844
 Trp Leu Gln Val Asp Leu Gly Asp Glu Lys Ile Val Arg Gly Val Ile
 485 490 495
 att cag ggt ggg aag cac cga gaa aac aag gtg ttc atg agg aag ttc 1892
 Ile Gln Gly Gly Lys His Arg Glu Asn Lys Val Phe Met Arg Lys Phe
 500 505 510 515

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Lys Ile Ala Tyr Ser Asn Asn Gly Ser Asp Trp Lys Thr Ile Met Asp
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Asp Ser Lys Arg Lys Ala Lys Ser Phe Glu Gly Asn Asn Asn Tyr Asp
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Thr Pro Glu Leu Arg Thr Phe Ser Pro Leu Ser Thr Arg Phe Ile Arg
550 555 560
atc tac cct gag aga gcc aca cac agt ggg ctt ggg ctg agg atg gag 2084
Ile Tyr Pro Glu Arg Ala Thr His Ser Gly Leu Gly Leu Arg Met Glu
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cta ctg ggc tgt gaa gtg gaa gca cct aca gct gga cca acc aca ccc 2132
Leu Leu Gly Cys Glu Val Glu Ala Pro Thr Ala Gly Pro Thr Thr Pro
580 585 590 595
aat ggg aac cca gtg cat gag tgt gac gac gac cag gcc aac tgc cac 2180
Asn Gly Asn Pro Val His Glu Cys Asp Asp Asp Gln Ala Asn Cys His
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Ser Gly Thr Gly Asp Asp Phe Gln Leu Thr Gly Gly Thr Thr Val Leu
615 620 625
gcc aca gag aag cca acc att ata gac agc acc atc caa tca gag ttc 2276
Ala Thr Glu Lys Pro Thr Ile Ile Asp Ser Thr Ile Gln Ser Glu Phe
630 635 640
ccg aca tac ggt ttt aac tgc gag ttt ggc tgg ggc tct cac aag aca 2324
Pro Thr Tyr Gly Phe Asn Cys Glu Phe Gly Trp Gly Ser His Lys Thr
645 650 655
ttc tgc cac tgg gag cat gac agc cat gca cag ctc agg tgg agt gtc 2372
Phe Cys His Trp Glu His Asp Ser His Ala Gln Leu Arg Trp Ser Val

660	665	670	675	
ctg acc agc aag aca ggg ccg att cag gac cat aca gga gat ggc aac	2420			
Leu Thr Ser Lys Thr Gly Pro Ile Gln Asp His Thr Gly Asp Gly Asn				
	680	685	690	
ttc atc tat tcc caa gct gat gaa aat cag aaa ggc aaa gta gcc cgc	2468			
Phe Ile Tyr Ser Gln Ala Asp Glu Asn Gln Lys Gly Lys Val Ala Arg				
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ctg gtg agc cct gtg gtc tat tcc cag agc tct gcc cac tgt atg acc	2516			
Leu Val Ser Pro Val Val Tyr Ser Gln Ser Ser Ala His Cys Met Thr				
	710	715	720	
ttc tgg tat cac atg tcc ggc tct cat gtg ggt aca ctg agg gtc aaa	2564			
Phe Trp Tyr His Met Ser Gly Ser His Val Gly Thr Leu Arg Val Lys				
	725	730	735	
cta cgc tac cag aag cca gag gaa tat gat caa ctg gtc tgg atg gtg	2612			
Leu Arg Tyr Gln Lys Pro Glu Glu Tyr Asp Gln Leu Val Trp Met Val				
740	745	750	755	
gtt ggg cac caa gga gac cac tgg aaa gaa gga cgt gtc ttg ctg cac	2660			
Val Gly His Gln Gly Asp His Trp Lys Glu Gly Arg Val Leu Leu His				
	760	765	770	
aaa tct ctg aaa cta tat cag gtt att ttt gaa ggt gaa atc gga aaa	2708			
Lys Ser Leu Lys Leu Tyr Gln Val Ile Phe Glu Gly Glu Ile Gly Lys				
	775	780	785	
gga aac ctt ggt gga att gct gtg gat gat atc agt att aac aac cat	2756			
Gly Asn Leu Gly Gly Ile Ala Val Asp Asp Ile Ser Ile Asn Asn His				
	790	795	800	
att tct cag gaa gac tgt gca aaa cca aca gac cta gat aaa aag aac	2804			
Ile Ser Gln Glu Asp Cys Ala Lys Pro Thr Asp Leu Asp Lys Lys Asn				
	805	810	815	
aca gaa att aaa att gat gaa aca ggg agc act cca gga tat gaa gga	2852			

Thr Glu Ile Lys Ile Asp Glu Thr Gly Ser Thr Pro Gly Tyr Glu Gly
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 gaa ggg gaa ggt gac aag aac atc tcc agg aag cca ggc aat gtg ctt 2900
 Glu Gly Glu Gly Asp Lys Asn Ile Ser Arg Lys Pro Gly Asn Val Leu
 840 845 850
 aag acc ctg gat ccc atc ctg atc acc atc ata gcc atg agt gcc ctg 2948
 Lys Thr Leu Asp Pro Ile Leu Ile Thr Ile Ile Ala Met Ser Ala Leu
 855 860 865
 gga gta ctc ctg ggt gca gtc tgt gga gtt gtg ctg tac tgt gcc tgt 2996
 Gly Val Leu Leu Gly Ala Val Cys Gly Val Val Leu Tyr Cys Ala Cys
 870 875 880
 tgg cac aat ggg atg tca gaa agg aac cta tct gcc ctg gag aac tat 3044
 Trp His Asn Gly Met Ser Glu Arg Asn Leu Ser Ala Leu Glu Asn Tyr
 885 890 895
 aac ttt gaa ctt gtg gat ggt gta aag ttg aaa aaa gat aaa ctg aac 3092
 Asn Phe Glu Leu Val Asp Gly Val Lys Leu Lys Lys Asp Lys Leu Asn
 900 905 910 915
 cca cag agt aat tac tca gag gcg tga aggcacggag ctggagggaa 3139
 Pro Gln Ser Asn Tyr Ser Glu Ala
 920
 caagggagga gcacggcagg agaacagggtg gaggcattggg gactctgtta ctctgctttc 3199
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<211> 923

<212> PRT

<213> Mus musculus

<400> 218

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35 40 45

His Pro Ser Glu Lys Cys Glu Trp Leu Ile Gln Ala Pro Glu Pro Tyr

50 55 60

Gln Arg Ile Ile Ile Asn Phe Asn Pro His Phe Asp Leu Glu Asp Arg

65 70 75 80

Asp Cys Lys Tyr Asp Tyr Val Glu Val Ile Asp Gly Glu Asn Glu Gly

85 90 95

Gly Arg Leu Trp Gly Lys Phe Cys Gly Lys Ile Ala Pro Ser Pro Val

100 105 110

Val Ser Ser Gly Pro Phe Leu Phe Ile Lys Phe Val Ser Asp Tyr Glu

115 120 125

Thr His Gly Ala Gly Phe Ser Ile Arg Tyr Glu Ile Phe Lys Arg Gly

130 135 140

Pro Glu Cys Ser Gln Asn Tyr Thr Ala Pro Thr Gly Val Ile Lys Ser

145 150 155 160

Pro Gly Phe Pro Glu Lys Tyr Pro Asn Cys Leu Glu Cys Thr Tyr Ile

165 170 175

Ile Phe Ala Pro Lys Met Ser Glu Ile Ile Leu Glu Phe Glu Ser Phe
 180 185 190
 Asp Leu Glu Gln Asp Ser Asn Pro Pro Gly Gly Met Phe Cys Arg Tyr
 195 200 205
 Asp Arg Leu Glu Ile Trp Asp Gly Phe Pro Glu Val Gly Pro His Ile
 210 215 220
 Gly Arg Tyr Cys Gly Gln Lys Thr Pro Gly Arg Ile Arg Ser Ser Ser
 225 230 235 240
 Gly Val Leu Ser Met Val Phe Tyr Thr Asp Ser Ala Ile Ala Lys Glu
 245 250 255
 Gly Phe Ser Ala Asn Tyr Ser Val Leu Gln Ser Ser Ile Ser Glu Asp
 260 265 270
 Phe Lys Cys Met Glu Ala Leu Gly Met Glu Ser Gly Glu Ile His Ser
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 Arg Ser Arg Leu Asn Tyr Pro Glu Asn Gly Trp Thr Pro Gly Glu Asp
 305 310 315 320
 Ser Tyr Lys Glu Trp Ile Gln Val Asp Leu Gly Leu Leu Arg Phe Val
 325 330 335
 Thr Ala Val Gly Thr Gln Gly Ala Ile Ser Lys Glu Thr Lys Lys Lys
 340 345 350
 Tyr Tyr Val Lys Thr Tyr Arg Val Asp Ile Ser Ser Asn Gly Glu Asp
 355 360 365
 Trp Ile Ser Leu Lys Glu Gly Asn Lys Ala Ile Ile Phe Gln Gly Asn
 370 375 380
 Thr Asn Pro Thr Asp Val Val Leu Gly Val Phe Ser Lys Pro Leu Ile
 385 390 395 400
 Thr Arg Phe Val Arg Ile Lys Pro Val Ser Trp Glu Thr Gly Ile Ser

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Met Arg Phe Glu Val Tyr Gly Cys Lys Ile Thr Asp Tyr Pro Cys Ser			
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Gly Met Leu Gly Met Val Ser Gly Leu Ile Ser Asp Ser Gln Ile Thr			
	435	440	445
Ala Ser Asn Gln Ala Asp Arg Asn Trp Met Pro Glu Asn Ile Arg Leu			
	450	455	460
Val Thr Ser Arg Thr Gly Trp Ala Leu Pro Pro Ser Pro His Pro Tyr			
465	470	475	480
Thr Asn Glu Trp Leu Gln Val Asp Leu Gly Asp Glu Lys Ile Val Arg			
	485	490	495
Gly Val Ile Ile Gln Gly Gly Lys His Arg Glu Asn Lys Val Phe Met			
	500	505	510
Arg Lys Phe Lys Ile Ala Tyr Ser Asn Asn Gly Ser Asp Trp Lys Thr			
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Ile Met Asp Asp Ser Lys Arg Lys Ala Lys Ser Phe Glu Gly Asn Asn			
	530	535	540
Asn Tyr Asp Thr Pro Glu Leu Arg Thr Phe Ser Pro Leu Ser Thr Arg			
545	550	555	560
Phe Ile Arg Ile Tyr Pro Glu Arg Ala Thr His Ser Gly Leu Gly Leu			
	565	570	575
Arg Met Glu Leu Leu Gly Cys Glu Val Glu Ala Pro Thr Ala Gly Pro			
	580	585	590
Thr Thr Pro Asn Gly Asn Pro Val His Glu Cys Asp Asp Asp Gln Ala			
	595	600	605
Asn Cys His Ser Gly Thr Gly Asp Asp Phe Gln Leu Thr Gly Gly Thr			
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Thr Val Leu Ala Thr Glu Lys Pro Thr Ile Ile Asp Ser Thr Ile Gln			
625	630	635	640

Ser Glu Phe Pro Thr Tyr Gly Phe Asn Cys Glu Phe Gly Trp Gly Ser
 645 650 655
 His Lys Thr Phe Cys His Trp Glu His Asp Ser His Ala Gln Leu Arg
 660 665 670
 Trp Ser Val Leu Thr Ser Lys Thr Gly Pro Ile Gln Asp His Thr Gly
 675 680 685
 Asp Gly Asn Phe Ile Tyr Ser Gln Ala Asp Glu Asn Gln Lys Gly Lys
 690 695 700
 Val Ala Arg Leu Val Ser Pro Val Val Tyr Ser Gln Ser Ser Ala His
 705 710 715 720
 Cys Met Thr Phe Trp Tyr His Met Ser Gly Ser His Val Gly Thr Leu
 725 730 735
 Arg Val Lys Leu Arg Tyr Gln Lys Pro Glu Glu Tyr Asp Gln Leu Val
 740 745 750
 Trp Met Val Val Gly His Gln Gly Asp His Trp Lys Glu Gly Arg Val
 755 760 765
 Leu Leu His Lys Ser Leu Lys Leu Tyr Gln Val Ile Phe Glu Gly Glu
 770 775 780
 Ile Gly Lys Gly Asn Leu Gly Gly Ile Ala Val Asp Asp Ile Ser Ile
 785 790 795 800
 Asn Asn His Ile Ser Gln Glu Asp Cys Ala Lys Pro Thr Asp Leu Asp
 805 810 815
 Lys Lys Asn Thr Glu Ile Lys Ile Asp Glu Thr Gly Ser Thr Pro Gly
 820 825 830
 Tyr Glu Gly Glu Gly Glu Gly Asp Lys Asn Ile Ser Arg Lys Pro Gly
 835 840 845
 Asn Val Leu Lys Thr Leu Asp Pro Ile Leu Ile Thr Ile Ile Ala Met
 850 855 860
 Ser Ala Leu Gly Val Leu Leu Gly Ala Val Cys Gly Val Val Leu Tyr

865	870	875	880
Cys Ala Cys Trp His Asn Gly Met Ser Glu Arg Asn Leu Ser Ala Leu			
	885	890	895
Glu Asn Tyr Asn Phe Glu Leu Val Asp Gly Val Lys Leu Lys Lys Asp			
	900	905	910
Lys Leu Asn Pro Gln Ser Asn Tyr Ser Glu Ala			
	915	920	

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<211> 314

<212> DNA

<213> Mus musculus

<400> 219

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acctgttgat agttgcccgag agtatcagca agatctggac agagagcttt gtaagcttaa 240
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314

<210> 220

<211> 512

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tgatagaaac actcggaggg atgttacact ggaagcctca agagagaaca gcaaaccceg 120

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<212> DNA

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<220>

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<222> (202).. (1671)

<400> 221

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 tctcctgcgg cctccaggcc a atg tgc aat acc aac atg tct gtg tct acc 231
 Met Cys Asn Thr Asn Met Ser Val Ser Thr
 1 5 10
 gag ggt gct gca agc acc tca cag att cca gct tgc gaa caa gag act 279
 Glu Gly Ala Ala Ser Thr Ser Gln Ile Pro Ala Ser Glu Gln Glu Thr
 15 20 25
 ctg gtt aga cca aaa cca ttg ctt ttg aag ttg tta aag tcc gtt gga 327
 Leu Val Arg Pro Lys Pro Leu Leu Leu Lys Leu Leu Lys Ser Val Gly

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Ala Gln Asn Asp Thr Tyr Thr Met Lys Glu Ile Ile Phe Tyr Ile Gly			
45	50	55	
cag tat att atg act aag agg tta tat gac gag aag cag cag cac att			423
Gln Tyr Ile Met Thr Lys Arg Leu Tyr Asp Glu Lys Gln Gln His Ile			
60	65	70	
gtg tat tgt tca aat gat ctc cta gga gat gtg ttt gga gtc ccg agt			471
Val Tyr Cys Ser Asn Asp Leu Leu Gly Asp Val Phe Gly Val Pro Ser			
75	80	85	90
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Phe Ser Val Lys Glu His Arg Lys Ile Tyr Ala Met Ile Tyr Arg Asn			
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tta gtg gct gta agt cag caa gac tct ggc aca tcg ctg agt gag agc			567
Leu Val Ala Val Ser Gln Gln Asp Ser Gly Thr Ser Leu Ser Glu Ser			
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aga cgt cag cct gaa ggt ggg agt gat ctg aag gat cct ttg caa gcg			615
Arg Arg Gln Pro Glu Gly Gly Ser Asp Leu Lys Asp Pro Leu Gln Ala			
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cca cca gaa gag aaa cct tca tct tct gat tta att tct aga ctg tct			663
Pro Pro Glu Glu Lys Pro Ser Ser Ser Asp Leu Ile Ser Arg Leu Ser			
140	145	150	
acc tca tct aga agg aga tcc att agt gag aca gaa gag aac aca gat			711
Thr Ser Ser Arg Arg Arg Ser Ile Ser Glu Thr Glu Glu Asn Thr Asp			
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gag cta cct ggg gag cgg cac cgg aag cgc cgc agg tcc ctg tcc ttt			759
Glu Leu Pro Gly Glu Arg His Arg Lys Arg Arg Arg Ser Leu Ser Phe			
175	180	185	
gat ccg agc ctg ggt ctg tgt gag ctg agg gag atg tgc agc ggc ggc			807

Asp Pro Ser Leu Gly Leu Cys Glu Leu Arg Glu Met Cys Ser Gly Gly
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 His Gln Asp Leu Asp Asp Gly Val Ser Glu His Ser Gly Asp Cys Leu
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 Asp Gln Asp Ser Val Ser Asp Gln Phe Ser Val Glu Phe Glu Val Glu
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 Ser Leu Asp Ser Glu Asp Tyr Ser Leu Ser Asp Glu Gly His Glu Leu
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 Glu Ser Asp Thr Asp Ser Phe Glu Gly Asp Pro Glu Ile Ser Leu Ala
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 Asp Tyr Trp Lys Cys Thr Ser Cys Asn Glu Met Asn Pro Pro Leu Pro
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 Ser His Cys Lys Arg Cys Trp Thr Leu Arg Glu Asn Trp Leu Pro Asp
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 Asp Lys Gly Lys Asp Lys Val Glu Ile Ser Glu Lys Ala Lys Leu Glu
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Leu Thr Glu Asn Asp Ala Lys Glu Pro Cys Ala Glu Glu Asp Ser Glu	
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Gln Pro Ser Thr Ser Ser Ser Ile Val Tyr Ser Ser Gln Glu Ser Val	
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Lys Glu Leu Lys Glu Glu Thr Gln His Lys Asp Glu Ser Val Glu Ser	
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Ser Phe Ser Leu Asn Ala Ile Glu Pro Cys Val Ile Cys Gln Gly Arg	
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Pro Lys Asn Gly Cys Ile Val His Gly Lys Thr Gly His Leu Met Ser	
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Cys Phe Thr Cys Ala Lys Lys Leu Lys Lys Arg Asn Lys Pro Cys Pro	
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        65             70             75             80
Leu Leu Gly Asp Val Phe Gly Val Pro Ser Phe Ser Val Lys Glu His
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Arg Lys Ile Tyr Ala Met Ile Tyr Arg Asn Leu Val Ala Val Ser Gln
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Gln Asp Ser Gly Thr Ser Leu Ser Glu Ser Arg Arg Gln Pro Glu Gly
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Gly Ser Asp Leu Lys Asp Pro Leu Gln Ala Pro Pro Glu Glu Lys Pro
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Ser Ser Ser Asp Leu Ile Ser Arg Leu Ser Thr Ser Ser Arg Arg Arg
          145            150            155            160
Ser Ile Ser Glu Thr Glu Glu Asn Thr Asp Glu Leu Pro Gly Glu Arg
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His Arg Lys Arg Arg Arg Ser Leu Ser Phe Asp Pro Ser Leu Gly Leu

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Asp Gln Phe Ser Val Glu Phe Glu Val Glu Ser Leu Asp Ser Glu Asp			
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Tyr Ser Leu Ser Asp Glu Gly His Glu Leu Ser Asp Glu Asp Asp Glu			
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Val Tyr Arg Val Thr Val Tyr Gln Thr Gly Glu Ser Asp Thr Asp Ser			
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Ser Cys Asn Glu Met Asn Pro Pro Leu Pro Ser His Cys Lys Arg Cys			
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Trp Thr Leu Arg Glu Asn Trp Leu Pro Asp Asp Lys Gly Lys Asp Lys			
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Val Glu Ile Ser Glu Lys Ala Lys Leu Glu Asn Ser Ala Gln Ala Glu			
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Glu Gly Leu Asp Val Pro Asp Gly Lys Lys Leu Thr Glu Asn Asp Ala			
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Lys Glu Pro Cys Ala Glu Glu Asp Ser Glu Glu Lys Ala Glu Gln Thr			
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Pro Leu Ser Gln Glu Ser Asp Asp Tyr Ser Gln Pro Ser Thr Ser Ser			
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Ser Ile Val Tyr Ser Ser Gln Glu Ser Val Lys Glu Leu Lys Glu Glu			
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Thr Gln His Lys Asp Glu Ser Val Glu Ser Ser Phe Ser Leu Asn Ala
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 1 5 10 15
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 Val Gly Leu Phe Leu Val Leu Leu Ala Arg Gly Cys Leu Ala Glu Glu
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Pro Pro Arg Phe Ile Arg Glu Pro Lys Asp Gln Ile Gly Val Ser Gly
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Gly Val Ala Ser Phe Val Cys Gln Ala Thr Gly Asp Pro Lys Pro Arg
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Val Thr Trp Asn Lys Lys Gly Lys Lys Val Asn Ser Gln Arg Phe Glu
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acc att gac ttt gac gag agc tct ggg gcg gtc ctg agg atc cag cca 410
Thr Ile Asp Phe Asp Glu Ser Ser Gly Ala Val Leu Arg Ile Gln Pro
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Leu Arg Thr Pro Arg Asp Glu Asn Val Tyr Glu Cys Val Ala Gln Asn
      100              105              110

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Ser Val Gly Glu Ile Thr Ile His Ala Lys Leu Thr Val Leu Arg Glu
      115              120              125

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Asp Gln Leu Pro Pro Gly Phe Pro Asn Ile Asp Met Gly Pro Gln Leu
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aag gtt gla gag cgc aca cgc aca gcc acc atg ctc tgt gct gcc agc 602
Lys Val Val Glu Arg Thr Arg Thr Ala Thr Met Leu Cys Ala Ala Ser
      145              150              155

ggg aac ccg gac cct gag atc acc tgg ttt aag gac ttc ctg cct gtg 650
Gly Asn Pro Asp Pro Glu Ile Thr Trp Phe Lys Asp Phe Leu Pro Val
      160              165              170              175

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Val Ala Thr Asn Ser Ala Gly Val Arg Tyr Ser Ser Pro Ala Asn Leu			
210	215	220	
tac gtg cga gtc cgc cgt gtg gcc cca cgc ttc tcc atc ctg ccc atg	842		
Tyr Val Arg Val Arg Arg Val Ala Pro Arg Phe Ser Ile Leu Pro Met			
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Ser His Glu Ile Met Pro Gly Gly Asn Val Asn Ile Thr Cys Val Ala			
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Leu Thr Pro Glu Asp Asp Met Pro Val Gly Arg Asn Val Leu Glu Leu			
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Pro Pro Gln Asp Val Lys Cys Thr Ser Leu Arg Ser Thr Ala Ile Leu	
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Val Ser Trp Arg Pro Pro Pro Pro Glu Thr His Asn Gly Ala Leu Val	
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Pro Pro Ala Asp Ala Ala Glu Asp Pro Val Leu Gly Tyr Arg Leu Gln
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Arg Gly Pro Gly Pro Phe Ser Pro Pro Leu Arg Tyr Arg Leu Ala Arg			
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Leu Lys Ala Asn Asp Ser Leu Lys Leu Ser Gln Glu Tyr Glu Ser Ile	
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gac ccc ggg cag caa ttc acg tgg gaa cat tcg aac ctg gag gcc aac	4250
Asp Pro Gly Gln Gln Phe Thr Trp Glu His Ser Asn Leu Glu Ala Asn	
1360 1365 1370 1375	
aag ccc aag aac cgc tat gcc aac gtc atc gcc tat gac cac tca cga	4298
Lys Pro Lys Asn Arg Tyr Ala Asn Val Ile Ala Tyr Asp His Ser Arg	
1380 1385 1390	
gtc atc ctg cag ccc cta gaa ggc atc atg ggt agt gat tac atc aat	4346
Val Ile Leu Gln Pro Leu Glu Gly Ile Met Gly Ser Asp Tyr Ile Asn	
1395 1400 1405	
gcc aac tat gtg gac ggc tac cgg cgg cag aat gca tac att gcc acg	4394
Ala Asn Tyr Val Asp Gly Tyr Arg Arg Gln Asn Ala Tyr Ile Ala Thr	

1410	1415	1420	
cag ggg ccc ctg cct gag acc ttt ggg gac ttc tgg cgg atg gtg tgg			4442
Gln Gly Pro Leu Pro Glu Thr Phe Gly Asp Phe Trp Arg Met Val Trp			
1425	1430	1435	
gag cag cga tcg gcc act gtg gtc atg atg acg cga ctg gag gag aaa			4490
Glu Gln Arg Ser Ala Thr Val Val Met Met Thr Arg Leu Glu Glu Lys			
1440	1445	1450	1455
tca cgg atc aaa tgt gac caa tac tgg cct aac cga ggc acc gag aca			4538
Ser Arg Ile Lys Cys Asp Gln Tyr Trp Pro Asn Arg Gly Thr Glu Thr			
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tac ggc ttc atc cag gtc acc cta cta gat acc atg gag ctg gct acc			4586
Tyr Gly Phe Ile Gln Val Thr Leu Leu Asp Thr Met Glu Leu Ala Thr			
1475	1480	1485	
ttc tgc gtc agg act ttt tct cta cac aag aat ggc tct agc gag aag			4634
Phe Cys Val Arg Thr Phe Ser Leu His Lys Asn Gly Ser Ser Glu Lys			
1490	1495	1500	
cgt gag gtg cga cat ttc cag ttc acg gca tgg ccc gac cac ggg tac			4682
Arg Glu Val Arg His Phe Gln Phe Thr Ala Trp Pro Asp His Gly Tyr			
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ccc acg ccc ttc ctg gca ttc ctg cga aga gtc aag acc tgc aac ccg			4730
Pro Thr Pro Phe Leu Ala Phe Leu Arg Arg Val Lys Thr Cys Asn Pro			
1520	1525	1530	1535
cct gat gct ggc ccc att gtg gtc cac tgc agc gcg ggt gtg ggg cgc			4778
Pro Asp Ala Gly Pro Ile Val Val His Cys Ser Ala Gly Val Gly Arg			
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act ggc tgc ttc atc gta att gac gcc atg cta gag cgc atc aag aca			4826
Thr Gly Cys Phe Ile Val Ile Asp Ala Met Leu Glu Arg Ile Lys Thr			
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Glu Lys Thr Val Asp Val Tyr Gly His Val Thr Leu Met Arg Ser Gln
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 Ser Leu Tyr Thr Tyr Ile Gln Lys Leu Ala Gln Val Glu Pro Gly Glu
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 His Val Thr Gly Met Glu Leu Glu Phe Lys Arg Leu Ala Ser Ser Lys
 1635 1640 1645
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 1650 1655 1660
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 Lys Asn Arg Leu Val Asn Ile Leu Pro Tyr Glu Ser Ser Arg Val Cys
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 Leu Gln Pro Ile Arg Gly Val Glu Gly Ser Asp Tyr Ile Asn Ala Ser
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 ttt atc gac ggc tat aga cag cag aaa gcc tac att gca aca cag ggg 5258
 Phe Ile Asp Gly Tyr Arg Gln Gln Lys Ala Tyr Ile Ala Thr Gln Gly
 1700 1705 1710
 cca ctg gca gag acc aca gag gac ttc tgg cga gct ctg tgg gag aac 5306
 Pro Leu Ala Glu Thr Thr Glu Asp Phe Trp Arg Ala Leu Trp Glu Asn
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 Asn Ser Thr Ile Val Val Met Leu Thr Lys Leu Arg Glu Met Gly Arg
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 Glu Lys Cys His Gln Tyr Trp Pro Ala Glu Arg Ser Ala Arg Tyr Gln
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 Tyr Phe Val Val Asp Pro Met Ala Glu Tyr Asn Met Pro Gln Tyr Ile
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 Leu Arg Glu Phe Lys Val Thr Asp Ala Arg Asp Gly Gln Ser Arg Thr
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 Val Arg Gln Phe Gln Phe Thr Asp Trp Pro Glu Gln Gly Ala Pro Lys
 1795 1800 1805
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 Ser Gly Glu Gly Phe Ile Asp Phe Ile Gly Gln Val His Lys Thr Lys
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 gag cag ttt ggc cag gac gga ccc atc tca gtg cac tgc agc gcc gga 5642
 Glu Gln Phe Gly Gln Asp Gly Pro Ile Ser Val His Cys Ser Ala Gly
 1825 1830 1835
 gtg ggc agg acc gga gtg ttc atc acc ctg agc atc gtg ctt gag cgg 5690
 Val Gly Arg Thr Gly Val Phe Ile Thr Leu Ser Ile Val Leu Glu Arg
 1840 1845 1850 1855
 atg cgc tac gag ggc gtg gtg gac att ttc cag aca gtg aag gtg ctt 5738
 Met Arg Tyr Glu Gly Val Val Asp Ile Phe Gln Thr Val Lys Val Leu
 1860 1865 1870
 cgg acc cag agg cct gcc atg gtg cag aca gag gac gag tac cag ttc 5786
 Arg Thr Gln Arg Pro Ala Met Val Gln Thr Glu Asp Glu Tyr Gln Phe

1875	1880	1885	
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Cys Phe Gln Ala Ala Leu Glu Tyr Leu Gly Ser Phe Asp His Tyr Ala			
1890	1895	1900	
aca taa gccatgggcc ccgcccaca cctcagccct gcgccaagt ccctggatgt			5890
Thr			
1905			
gagcctaggg ccgccgtgg gcaggatgcg gccagggag acctcctctt cgcgagagaca			5950
ggcgctgcct tcctcatlcc ctctgattc caaaacgagg ttccaggggtg gggggttggg			6010
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aactgagggtc tctctttgtg ggagagtggg tcagtactcg tccccgtgt tttttgggca			6670
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tccg			6734

<210> 224

<211> 1904

<212> PRT

<213> Mus musculus

<400> 224

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 35 40 45
 Val Ala Ser Phe Val Cys Gln Ala Thr Gly Asp Pro Lys Pro Arg Val
 50 55 60
 Thr Trp Asn Lys Lys Gly Lys Lys Val Asn Ser Gln Arg Phe Glu Thr
 65 70 75 80
 Ile Asp Phe Asp Glu Ser Ser Gly Ala Val Leu Arg Ile Gln Pro Leu
 85 90 95
 Arg Thr Pro Arg Asp Glu Asn Val Tyr Glu Cys Val Ala Gln Asn Ser
 100 105 110
 Val Gly Glu Ile Thr Ile His Ala Lys Leu Thr Val Leu Arg Glu Asp
 115 120 125
 Gln Leu Pro Pro Gly Phe Pro Asn Ile Asp Met Gly Pro Gln Leu Lys
 130 135 140
 Val Val Glu Arg Thr Arg Thr Ala Thr Met Leu Cys Ala Ala Ser Gly
 145 150 155 160
 Asn Pro Asp Pro Glu Ile Thr Trp Phe Lys Asp Phe Leu Pro Val Asp
 165 170 175
 Pro Ser Ala Ser Asn Gly Arg Ile Lys Gln Leu Arg Ser Gly Ala Leu
 180 185 190
 Gln Ile Glu Ser Ser Glu Glu Thr Asp Gln Gly Lys Tyr Glu Cys Val
 195 200 205
 Ala Thr Asn Ser Ala Gly Val Arg Tyr Ser Ser Pro Ala Asn Leu Tyr
 210 215 220
 Val Arg Val Arg Arg Val Ala Pro Arg Phe Ser Ile Leu Pro Met Ser

225	230	235	240
His Glu Ile Met Pro Gly Gly Asn Val Asn Ile Thr Cys Val Ala Val			
	245	250	255
Gly Ser Pro Met Pro Tyr Val Lys Trp Met Gln Gly Ala Glu Asp Leu			
	260	265	270
Thr Pro Glu Asp Asp Met Pro Val Gly Arg Asn Val Leu Glu Leu Thr			
	275	280	285
Asp Val Lys Asp Ser Ala Asn Tyr Thr Cys Val Ala Met Ser Ser Leu			
	290	295	300
Gly Val Ile Glu Ala Val Ala Gln Ile Thr Val Lys Ser Leu Pro Lys			
305	310	315	320
Ala Pro Gly Thr Pro Val Val Thr Glu Asn Thr Ala Thr Ser Ile Thr			
	325	330	335
Val Thr Trp Asp Ser Gly Asn Pro Asp Pro Val Ser Tyr Tyr Val Ile			
	340	345	350
Glu Tyr Lys Ser Lys Ser Gln Asp Gly Pro Tyr Gln Ile Lys Glu Asp			
	355	360	365
Ile Thr Thr Thr Arg Tyr Ser Ile Gly Gly Leu Ser Pro Asn Ser Glu			
	370	375	380
Tyr Glu Ile Trp Val Ser Ala Val Asn Ser Ile Gly Gln Gly Pro Pro			
385	390	395	400
Ser Glu Ser Val Val Thr Arg Thr Gly Glu Gln Ala Pro Ala Ser Ala			
	405	410	415
Pro Arg Asn Val Gln Ala Arg Met Leu Ser Ala Thr Thr Met Ile Val			
	420	425	430
Gln Trp Glu Glu Pro Val Glu Pro Asn Gly Leu Ile Arg Gly Tyr Arg			
	435	440	445
Val Tyr Tyr Thr Met Glu Pro Glu His Pro Val Gly Asn Trp Gln Lys			
450	455	460	

His Asn Val Asp Asp Ser Leu Leu Thr Thr Val Gly Ser Leu Leu Glu
 465 470 475 480
 Asp Glu Thr Tyr Thr Val Arg Val Leu Ala Phe Thr Ser Val Gly Asp
 485 490 495
 Gly Pro Leu Ser Asp Pro Ile Gln Val Lys Thr Gln Gln Gly Val Pro
 500 505 510
 Gly Gln Pro Met Asn Leu Arg Ala Glu Ala Lys Ser Glu Thr Ser Ile
 515 520 525
 Gly Leu Ser Trp Ser Ala Pro Arg Gln Glu Ser Val Ile Lys Tyr Glu
 530 535 540
 Leu Leu Phe Arg Glu Gly Asp Arg Gly Arg Glu Val Gly Arg Thr Phe
 545 550 555 560
 Asp Pro Thr Thr Ala Phe Val Val Glu Asp Leu Lys Pro Asn Thr Glu
 565 570 575
 Tyr Ala Phe Arg Leu Ala Ala Arg Ser Pro Gln Gly Leu Gly Ala Phe
 580 585 590
 Thr Ala Val Val Arg Gln Arg Thr Leu Gln Ala Lys Pro Ser Ala Pro
 595 600 605
 Pro Gln Asp Val Lys Cys Thr Ser Leu Arg Ser Thr Ala Ile Leu Val
 610 615 620
 Ser Trp Arg Pro Pro Pro Pro Glu Thr His Asn Gly Ala Leu Val Gly
 625 630 635 640
 Tyr Ser Val Arg Tyr Arg Pro Leu Gly Ser Glu Asp Pro Asp Pro Lys
 645 650 655
 Glu Val Asn Asn Ile Pro Pro Thr Thr Thr Gln Ile Leu Leu Glu Ala
 660 665 670
 Leu Glu Lys Trp Thr Glu Tyr Arg Val Thr Ala Val Ala Tyr Thr Glu
 675 680 685
 Val Gly Pro Gly Pro Glu Ser Ser Pro Val Val Val Arg Thr Asp Glu

690	695	700	
Asp Val Pro Ser Ala Pro Pro Arg Lys Val Glu Ala Glu Ala Leu Asn			
705	710	715	720
Ala Thr Ala Ile Arg Val Leu Trp Arg Ser Pro Thr Pro Gly Arg Gln			
	725	730	735
His Gly Gln Ile Arg Gly Tyr Gln Val His Tyr Val Arg Met Glu Gly			
	740	745	750
Ala Glu Ala Arg Gly Pro Pro Arg Ile Lys Asp Ile Met Leu Ala Asp			
	755	760	765
Ala Gln Glu Met Val Ile Thr Asn Leu Gln Pro Glu Thr Ala Tyr Ser			
	770	775	780
Ile Thr Val Ala Ala Tyr Thr Met Lys Gly Asp Gly Ala Arg Ser Lys			
785	790	795	800
Pro Lys Val Val Val Thr Lys Gly Ala Val Leu Gly Arg Pro Thr Leu			
	805	810	815
Ser Val Gln Gln Thr Pro Glu Gly Ser Leu Leu Ala Arg Trp Glu Pro			
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Pro Ala Asp Ala Ala Glu Asp Pro Val Leu Gly Tyr Arg Leu Gln Phe			
	835	840	845
Gly Arg Glu Asp Ala Ala Pro Ala Thr Leu Glu Leu Ala Ala Trp Glu			
	850	855	860
Arg Arg Phe Ala Ala Pro Ala His Lys Gly Ala Thr Tyr Val Phe Arg			
865	870	875	880
Leu Ala Ala Arg Gly Arg Ala Gly Leu Gly Glu Glu Ala Ala Ala Ala			
	885	890	895
Leu Ser Ile Pro Glu Asp Ala Pro Arg Gly Phe Pro Gln Ile Leu Gly			
	900	905	910
Ala Ala Gly Asn Val Ser Ala Gly Ser Val Leu Leu Arg Trp Leu Pro			
	915	920	925

Pro Val Pro Ala Glu Arg Asn Gly Ala Ile Ile Lys Tyr Thr Val Ser
 930 935 940
 Val Arg Glu Ala Gly Ala Pro Gly Pro Ala Thr Glu Thr Glu Leu Ala
 945 950 955 960
 Ala Ala Ala Gln Pro Gly Ala Glu Thr Ala Leu Thr Leu Arg Gly Leu
 965 970 975
 Arg Pro Glu Thr Ala Tyr Glu Leu Arg Val Arg Ala His Thr Arg Arg
 980 985 990
 Gly Pro Gly Pro Phe Ser Pro Pro Leu Arg Tyr Arg Leu Ala Arg Asp
 995 1000 1005
 Pro Val Ser Pro Lys Asn Phe Lys Val Lys Met Ile Met Lys Thr Ser
 1010 1015 1020
 Val Leu Leu Ser Trp Glu Phe Pro Asp Asn Tyr Asn Ser Pro Thr Pro
 1025 1030 1035 1040
 Tyr Lys Ile Gln Tyr Asn Gly Leu Thr Leu Asp Val Asp Gly Arg Thr
 1045 1050 1055
 Thr Lys Lys Leu Ile Thr His Leu Lys Pro His Thr Phe Tyr Asn Phe
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 1075 1080 1085
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 1090 1095 1100
 Pro Lys Pro Asp Asn Asp Gly Phe Ile Val Val Tyr Leu Pro Asp Gly
 1105 1110 1115 1120
 Gln Ser Pro Val Thr Val Gln Asn Tyr Phe Ile Val Met Val Pro Leu
 1125 1130 1135
 Arg Lys Ser Arg Gly Gly Gln Phe Pro Val Leu Leu Gly Ser Pro Glu
 1140 1145 1150
 Asp Met Asp Leu Glu Glu Leu Ile Gln Asp Ile Ser Arg Leu Gln Arg

1155	1160	1165	
Arg Ser Leu Arg His Ser Arg Gln Leu Glu Val Pro Arg Pro Tyr Ile			
1170	1175	1180	
Ala Ala Arg Phe Ser Ile Leu Pro Ala Val Phe His Pro Gly Asn Gln			
185	1190	1195	1200
Lys Gln Tyr Gly Gly Phe Asp Asn Arg Gly Leu Glu Pro Gly His Arg			
1205	1210	1215	
Tyr Val Leu Phe Val Leu Ala Val Leu Gln Lys Asn Glu Pro Thr Phe			
1220	1225	1230	
Ala Ala Ser Pro Phe Ser Asp Pro Phe Gln Leu Asp Asn Pro Asp Pro			
1235	1240	1245	
Gln Pro Ile Val Asp Gly Glu Glu Gly Leu Ile Trp Val Ile Gly Pro			
1250	1255	1260	
Val Leu Ala Val Val Phe Ile Ile Cys Ile Val Ile Ala Ile Leu Leu			
265	1270	1275	1280
Tyr Lys Asn Lys Pro Asp Ser Lys Arg Lys Asp Ser Glu Pro Arg Thr			
1285	1290	1295	
Lys Cys Leu Leu Asn Asn Ala Asp Leu Ala Pro His His Pro Lys Asp			
1300	1305	1310	
Pro Val Glu Met Arg Arg Ile Asn Phe Gln Thr Pro Gly Met Leu Ser			
1315	1320	1325	
His Pro Pro Ile Pro Ile Thr Asp Met Ala Glu His Met Glu Arg Leu			
1330	1335	1340	
Lys Ala Asn Asp Ser Leu Lys Leu Ser Gln Glu Tyr Glu Ser Ile Asp			
345	1350	1355	1360
Pro Gly Gln Gln Phe Thr Trp Glu His Ser Asn Leu Glu Ala Asn Lys			
1365	1370	1375	
Pro Lys Asn Arg Tyr Ala Asn Val Ile Ala Tyr Asp His Ser Arg Val			
1380	1385	1390	

Ile Leu Gln Pro Leu Glu Gly Ile Met Gly Ser Asp Tyr Ile Asn Ala
 1395 1400 1405
 Asn Tyr Val Asp Gly Tyr Arg Arg Gln Asn Ala Tyr Ile Ala Thr Gln
 1410 1415 1420
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 1445 1450 1455
 Arg Ile Lys Cys Asp Gln Tyr Trp Pro Asn Arg Gly Thr Glu Thr Tyr
 1460 1465 1470
 Gly Phe Ile Gln Val Thr Leu Leu Asp Thr Met Glu Leu Ala Thr Phe
 1475 1480 1485
 Cys Val Arg Thr Phe Ser Leu His Lys Asn Gly Ser Ser Glu Lys Arg
 1490 1495 1500
 Glu Val Arg His Phe Gln Phe Thr Ala Trp Pro Asp His Gly Tyr Pro
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 Thr Pro Phe Leu Ala Phe Leu Arg Arg Val Lys Thr Cys Asn Pro Pro
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 Asp Ala Gly Pro Ile Val Val His Cys Ser Ala Gly Val Gly Arg Thr
 1540 1545 1550
 Gly Cys Phe Ile Val Ile Asp Ala Met Leu Glu Arg Ile Lys Thr Glu
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 Lys Thr Val Asp Val Tyr Gly His Val Thr Leu Met Arg Ser Gln Arg
 1570 1575 1580
 Asn Tyr Met Val Gln Thr Glu Asp Gln Tyr Gly Phe Ile His Glu Ala
 1585 1590 1595 1600
 Leu Leu Glu Ala Val Gly Cys Gly Asn Thr Glu Val Pro Ala Arg Ser
 1605 1610 1615
 Leu Tyr Thr Tyr Ile Gln Lys Leu Ala Gln Val Glu Pro Gly Glu His

1620	1625	1630	
Val Thr Gly Met Glu Leu Glu Phe Lys Arg Leu Ala Ser Ser Lys Ala			
1635	1640	1645	
His Thr Ser Arg Phe Ile Thr Ala Ser Leu Pro Cys Asn Lys Phe Lys			
1650	1655	1660	
Asn Arg Leu Val Asn Ile Leu Pro Tyr Glu Ser Ser Arg Val Cys Leu			
665	1670	1675	1680
Gln Pro Ile Arg Gly Val Glu Gly Ser Asp Tyr Ile Asn Ala Ser Phe			
1685	1690	1695	
Ile Asp Gly Tyr Arg Gln Gln Lys Ala Tyr Ile Ala Thr Gln Gly Pro			
1700	1705	1710	
Leu Ala Glu Thr Thr Glu Asp Phe Trp Arg Ala Leu Trp Glu Asn Asn			
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1730	1735	1740	
Lys Cys His Gln Tyr Trp Pro Ala Glu Arg Ser Ala Arg Tyr Gln Tyr			
745	1750	1755	1760
Phe Val Val Asp Pro Met Ala Glu Tyr Asn Met Pro Gln Tyr Ile Leu			
1765	1770	1775	
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Gln Phe Gly Gln Asp Gly Pro Ile Ser Val His Cys Ser Ala Gly Val			
825	1830	1835	1840
Gly Arg Thr Gly Val Phe Ile Thr Leu Ser Ile Val Leu Glu Arg Met			
1845	1850	1855	

Arg Tyr Glu Gly Val Val Asp Ile Phe Gln Thr Val Lys Val Leu Arg

1860

1865

1870

Thr Gln Arg Pro Ala Met Val Gln Thr Glu Asp Glu Tyr Gln Phe Cys

1875

1880

1885

Phe Gln Ala Ala Leu Glu Tyr Leu Gly Ser Phe Asp His Tyr Ala Thr

1890

1895

1900

<210> 225

<211> 432

<212> DNA

<213> Mus musculus

<400> 225

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gagaactgcg cgctttatca ctgtgccacg ccccatcatg tgtcaggcac agctctctat 300
gccttctacc ctagaactca ggttgacagag gcaggaggat ctatgcagag tccaggccag 360
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aaaaaaaaaa ag 432
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<210> 226

<211> 566

<212> DNA

<213> Mus musculus

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<210> 227

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<212> DNA

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<220>

<221> CDS

<222> (140).. (2719)

<400> 227

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 gaggcggacc gggccagcc atg tcg gtg gtt ggg cta gag cta ggc tca cag 172

Met Ser Val Val Gly Leu Glu Leu Gly Ser Gln

1

5

10

agc tgc tac att gcg gtg gcg cgg gcc ggg ggc atc gag acc atc gcc 220

Ser Cys Tyr Ile Ala Val Ala Arg Ala Gly Gly Ile Glu Thr Ile Ala

15

20

25

aac gag ttc agc gac cgc tgc acc ccg tca gtc ata tca ttt gga tca 268

Asn Glu Phe Ser Asp Arg Cys Thr Pro Ser Val Ile Ser Phe Gly Ser
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 aaa aac aga aca att gga gtt gca gcc aaa aac cag caa atc act cat 316
 Lys Asn Arg Thr Ile Gly Val Ala Ala Lys Asn Gln Gln Ile Thr His
 45 50 55
 gca aac aat acg gtc tct agc ttt aag aga ttt cat ggc aga gca ttc 364
 Ala Asn Asn Thr Val Ser Ser Phe Lys Arg Phe His Gly Arg Ala Phe
 60 65 70 75
 aat gac ccc ttc att cag aag gaa aag gag aac ctg agc tat gat ttg 412
 Asn Asp Pro Phe Ile Gln Lys Glu Lys Glu Asn Leu Ser Tyr Asp Leu
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 gtc cca atg aaa aat ggt ggc gtg gga ata aag gtc atg tac atg gat 460
 Val Pro Met Lys Asn Gly Gly Val Gly Ile Lys Val Met Tyr Met Asp
 95 100 105
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 Glu Glu His Phe Phe Ser Val Glu Gln Ile Thr Ala Met Leu Leu Thr
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 aag tta aag gaa act gca gaa aac aac ctc aag aag cca gtg aca gac 556
 Lys Leu Lys Glu Thr Ala Glu Asn Asn Leu Lys Lys Pro Val Thr Asp
 125 130 135
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 Cys Val Ile Ser Val Pro Ser Phe Phe Thr Asp Ala Glu Arg Arg Ser
 140 145 150 155
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 Val Leu Asp Arg Ala Gln Ile Val Gly Leu Asn Cys Leu Arg Leu Met
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 aat gac atg acg gct gtt gct ttg aat tat ggg att tat aag caa gat 700
 Asn Asp Met Thr Ala Val Ala Leu Asn Tyr Gly Ile Tyr Lys Gln Asp
 175 180 185

ctc ccg aat gcc gag gag aag cca cgg gtg gtg gtg ttt gtt gac atg	748
Leu Pro Asn Ala Glu Glu Lys Pro Arg Val Val Val Phe Val Asp Met	
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gga cac tca tct ttc caa gtg tct gcc tgt gct ttt aac aaa gga aaa	796
Gly His Ser Ser Phe Gln Val Ser Ala Cys Ala Phe Asn Lys Gly Lys	
205 210 215	
ctg aag gtt cta ggc aca gct ttt gat ccc ttc tta gga gga aag aac	844
Leu Lys Val Leu Gly Thr Ala Phe Asp Pro Phe Leu Gly Gly Lys Asn	
220 225 230 235	
ttt gat gag aag cta gta gaa cat ttt tgt gct gaa ttt aaa acc aag	892
Phe Asp Glu Lys Leu Val Glu His Phe Cys Ala Glu Phe Lys Thr Lys	
240 245 250	
tac aaa ttg gat gca aaa tcc aaa att cga gcc ctc ctt cgt ctc cat	940
Tyr Lys Leu Asp Ala Lys Ser Lys Ile Arg Ala Leu Leu Arg Leu His	
255 260 265	
cag gag tgt gaa aag ttg aaa aag ctc atg agt tct aac agc acg gac	988
Gln Glu Cys Glu Lys Leu Lys Lys Leu Met Ser Ser Asn Ser Thr Asp	
270 275 280	
ctg ccg ctg aac atc gag tgc ttt atg aat gac aag gat gtc tct ggg	1036
Leu Pro Leu Asn Ile Glu Cys Phe Met Asn Asp Lys Asp Val Ser Gly	
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aag atg aac agg tca cag ttt gaa gaa ctg tgt gct gag ctc ctg caa	1084
Lys Met Asn Arg Ser Gln Phe Glu Glu Leu Cys Ala Glu Leu Leu Gln	
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aaa ata gag gtc ccc ctt cac tcg ttg atg gca cag act cag ctc aag	1132
Lys Ile Glu Val Pro Leu His Ser Leu Met Ala Gln Thr Gln Leu Lys	
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Ala Glu Asp Val Ser Ala Ile Glu Ile Val Gly Gly Ala Thr Arg Ile	

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Pro Ala Val Lys Glu Arg Ile Ala Lys Phe Phe Gly Lys Asp Val Ser			
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Cys Ala Ile Leu Ser Pro Ala Phe Lys Val Arg Glu Phe Ser Val Thr			
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gat gca gtt cct ttt cca ata tct ctg gtc tgg aac cac gac tcg gaa	1372		
Asp Ala Val Pro Phe Pro Ile Ser Leu Val Trp Asn His Asp Ser Glu			
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gaa acg gaa ggt gtg cac gag gtg ttc agt cgg aac cat gct gct cct	1420		
Glu Thr Glu Gly Val His Glu Val Phe Ser Arg Asn His Ala Ala Pro			
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Phe Ser Lys Val Leu Thr Phe Leu Arg Arg Gly Pro Phe Glu Leu Glu			
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gct ttc tat tct gac cct caa gga gtt cca tat cca gaa gca aaa ata	1516		
Ala Phe Tyr Ser Asp Pro Gln Gly Val Pro Tyr Pro Glu Ala Lys Ile			
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Gly Arg Phe Val Val Gln Asn Val Ser Ala Gln Lys Asp Gly Glu Lys			
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tcg aga gtg aag gtc aaa gtg cgt gtg aac aca cat ggc atc ttc acc	1612		
Ser Arg Val Lys Val Lys Val Arg Val Asn Thr His Gly Ile Phe Thr			
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atc tcc acg gct tcc atg gtg gag aag gtc ccg acc gag gaa gag gat	1660		

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 Ser Pro Pro Ser Pro Glu Leu Thr Ser Glu Glu Ser Lys Thr Pro Asp
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 605 610 615
 gag ggc aag atg atc atg caa gac aag ctg gag aag gag cgg aac gac 2044
 Glu Gly Lys Met Ile Met Gln Asp Lys Leu Glu Lys Glu Arg Asn Asp
 620 625 630 635
 gcc aag aac gcc gtg gag gag tgt gta tat gag ttc agg gac aag cta 2092
 Ala Lys Asn Ala Val Glu Glu Cys Val Tyr Glu Phe Arg Asp Lys Leu
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Leu Arg Leu Leu Thr Glu Thr Glu Asp Trp Leu Tyr Glu Glu Gly Glu	
670 675 680	
gac cag gct aag cag gca tac att gac aag ttg gaa gag ctg atg aaa	2236
Asp Gln Ala Lys Gln Ala Tyr Ile Asp Lys Leu Glu Glu Leu Met Lys	
685 690 695	
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Met Gly Thr Pro Val Lys Val Arg Phe Gln Glu Ala Glu Glu Arg Pro	
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Lys Val Leu Glu Glu Leu Gly Gln Arg Leu Gln His Tyr Ala Lys Ile	
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Ala Ala Asp Phe Arg Gly Lys Asp Glu Lys Tyr Asn His Asn Asp Glu	
735 740 745	
tca gaa atg aag aag gtt gag aag tct gtt aat gag gtg atg gag tgg	2428
Ser Glu Met Lys Lys Val Glu Lys Ser Val Asn Glu Val Met Glu Trp	
750 755 760	
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765 770 775	
cct gtt gtt cga act cat gaa atc aga gcg aag gtc aag gaa ttg aac	2524
Pro Val Val Arg Thr His Glu Ile Arg Ala Lys Val Lys Glu Leu Asn	
780 785 790 795	
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Asn Val Cys Glu Pro Val Val Thr Gln Pro Lys Pro Lys Ile Glu Ser	

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Pro Lys Leu Glu Arg Thr Pro Asn Gly Pro Asn Ile Asp Lys Lys Glu			
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gat tta gaa ggc aaa aat aat ctt ggt gct gaa cgt ccg cat cag aat			2668
Asp Leu Glu Gly Lys Asn Asn Leu Gly Ala Glu Arg Pro His Gln Asn			
830	835	840	
ggt gaa tgc cac cct aat gag aag ggc tct gtc aac atg gac ctg gac			2716
Gly Glu Cys His Pro Asn Glu Lys Gly Ser Val Asn Met Asp Leu Asp			
845	850	855	
tag gctctgtgct ggctccctcc cccacttcat gagatgtggt tgccatagta			2769
860			
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<212> PRT

<213> Mus musculus

<400> 228

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Arg Cys Thr Pro Ser Val Ile Ser Phe Gly Ser Lys Asn Arg Thr Ile
          35             40             45
Gly Val Ala Ala Lys Asn Gln Gln Ile Thr His Ala Asn Asn Thr Val
          50             55             60
Ser Ser Phe Lys Arg Phe His Gly Arg Ala Phe Asn Asp Pro Phe Ile
          65             70             75             80
Gln Lys Glu Lys Glu Asn Leu Ser Tyr Asp Leu Val Pro Met Lys Asn
          85             90             95
Gly Gly Val Gly Ile Lys Val Met Tyr Met Asp Glu Glu His Phe Phe
          100            105            110
Ser Val Glu Gln Ile Thr Ala Met Leu Leu Thr Lys Leu Lys Glu Thr
          115            120            125
Ala Glu Asn Asn Leu Lys Lys Pro Val Thr Asp Cys Val Ile Ser Val
          130            135            140
Pro Ser Phe Phe Thr Asp Ala Glu Arg Arg Ser Val Leu Asp Arg Ala
          145            150            155            160
Gln Ile Val Gly Leu Asn Cys Leu Arg Leu Met Asn Asp Met Thr Ala
          165            170            175
Val Ala Leu Asn Tyr Gly Ile Tyr Lys Gln Asp Leu Pro Asn Ala Glu
          180            185            190
Glu Lys Pro Arg Val Val Val Phe Val Asp Met Gly His Ser Ser Phe
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Gln Val Ser Ala Cys Ala Phe Asn Lys Gly Lys Leu Lys Val Leu Gly
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Thr Ala Phe Asp Pro Phe Leu Gly Gly Lys Asn Phe Asp Glu Lys Leu
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 Lys Ser Lys Ile Arg Ala Leu Leu Arg Leu His Gln Glu Cys Glu Lys
 260 265 270
 Leu Lys Lys Leu Met Ser Ser Asn Ser Thr Asp Leu Pro Leu Asn Ile
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 Glu Cys Phe Met Asn Asp Lys Asp Val Ser Gly Lys Met Asn Arg Ser
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 Gln Phe Glu Glu Leu Cys Ala Glu Leu Leu Gln Lys Ile Glu Val Pro
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 Ala Ile Glu Ile Val Gly Gly Ala Thr Arg Ile Pro Ala Val Lys Glu
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 Asp Glu Ala Val Arg Arg Gly Cys Ala Leu Gln Cys Ala Ile Leu Ser
 370 375 380
 Pro Ala Phe Lys Val Arg Glu Phe Ser Val Thr Asp Ala Val Pro Phe
 385 390 395 400
 Pro Ile Ser Leu Val Trp Asn His Asp Ser Glu Glu Thr Glu Gly Val
 405 410 415
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 435 440 445
 Pro Gln Gly Val Pro Tyr Pro Glu Ala Lys Ile Gly Arg Phe Val Val

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 485 490 495
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 Ala Asp Met Glu Cys Phe Gln Asn Gln Arg Pro Thr Glu Ser Ser Asp
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 Gly Arg Asp Leu Leu Asn Met Tyr Ile Glu Thr Glu Gly Lys Met Ile
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 Met Gln Asp Lys Leu Glu Lys Glu Arg Asn Asp Ala Lys Asn Ala Val
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 Glu Glu Cys Val Tyr Glu Phe Arg Asp Lys Leu Cys Gly Pro Tyr Glu
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 Lys Phe Ile Cys Glu Gln Glu His Glu Lys Phe Leu Arg Leu Leu Thr
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 675 680 685

Ala Tyr Ile Asp Lys Leu Glu Glu Leu Met Lys Met Gly Thr Pro Val
 690 695 700
 Lys Val Arg Phe Gln Glu Ala Glu Glu Arg Pro Lys Val Leu Glu Glu
 705 710 715 720
 Leu Gly Gln Arg Leu Gln His Tyr Ala Lys Ile Ala Ala Asp Phe Arg
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 Gly Lys Asp Glu Lys Tyr Asn His Asn Asp Glu Ser Glu Met Lys Lys
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 755 760 765
 Asn Ala Gln Ala Lys Arg Ser Leu Asp Gln Asp Pro Val Val Arg Thr
 770 775 780
 His Glu Ile Arg Ala Lys Val Lys Glu Leu Asn Asn Val Cys Glu Pro
 785 790 795 800
 Val Val Thr Gln Pro Lys Pro Lys Ile Glu Ser Pro Lys Leu Glu Arg
 805 810 815
 Thr Pro Asn Gly Pro Asn Ile Asp Lys Lys Glu Asp Leu Glu Gly Lys
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<211> 2558

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (30).. (1694)

<400> 229

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Ser Leu Leu Ala Thr Ala Leu Thr Ser Pro Val Gln Asp Pro Lys Thr
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Cys Ser Gly Gly Ser Ala Val Leu Cys Arg Asp Val Lys Thr Ala Val
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Asp Cys Gly Ala Val Lys His Cys Gln Gln Met Val Trp Ser Lys Pro
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aca gcg aaa tcc ctt cct tgc gac ata tgc aaa act gtt gtc acc gaa      245
Thr Ala Lys Ser Leu Pro Cys Asp Ile Cys Lys Thr Val Val Thr Glu
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Ala Gly Asn Leu Leu Lys Asp Asn Ala Thr Gln Glu Glu Ile Leu His
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Tyr Leu Glu Lys Thr Cys Glu Trp Ile His Asp Ser Ser Leu Ser Ala
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tcg tgc aag gag gtg gtt gac tct tac ctg cct gtc atc ctg gac atg      389
Ser Cys Lys Glu Val Val Asp Ser Tyr Leu Pro Val Ile Leu Asp Met
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 ctt gag tcc aac aaa gtc ccg gag gtg gac atg gcc cgt gtg gtt gcc 533
 Leu Glu Ser Asn Lys Val Pro Glu Val Asp Met Ala Arg Val Val Ala
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 Pro Phe Ser Ala Asn Ile Pro Leu Leu Leu Tyr Pro Gln Asp His Pro
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 Arg Ser Gln Pro Gln Pro Lys Ala Asn Glu Asp Val Cys Gln Asp Cys
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 Gly Pro Gly Val Ser Asp Ile Cys Lys Asn Tyr Val Asp Gln Tyr Ser
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Leu Val Pro Ala Thr Glu Thr Ile Lys Asn Ile Leu Pro Ala Leu Glu	
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Met Met Asp Pro Tyr Glu Gln Asn Leu Val Gln Ala His Asn Val Ile	
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 Trp Asn
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<211> 554

<212> PRT

<213> Mus musculus

<400> 230

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Gln	Gln	Met	Val	Trp	Ser	Lys	Pro	Thr	Ala	Lys	Ser	Leu	Pro	Cys	Asp
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Ala	Thr	Gln	Glu	Glu	Ile	Leu	His	Tyr	Leu	Glu	Lys	Thr	Cys	Glu	Trp
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															95

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 Tyr Leu Pro Val Ile Leu Asp Met Ile Lys Gly Glu Met Ser Asn Pro
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 145 150 155 160
 Val Asp Met Ala Arg Val Val Ala Pro Phe Ser Ala Asn Ile Pro Leu
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 180 185 190
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 Val Lys Glu Asp Cys Asp Arg Leu Gly Pro Gly Val Ser Asp Ile Cys
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 His Met Gln Pro Lys Glu Ile Cys Val Leu Ala Gly Phe Cys Asn Glu
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 Val Lys Arg Val Pro Met Lys Thr Leu Val Pro Ala Thr Glu Thr Ile
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 Lys Asn Ile Leu Pro Ala Leu Glu Met Met Asp Pro Tyr Glu Gln Asn
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 Leu Val Gln Ala His Asn Val Ile Leu Cys Gln Thr Cys Gln Phe Val
 305 310 315 320
 Met Asn Lys Phe Ser Glu Leu Ile Val Asn Asn Ala Thr Glu Glu Leu

325 330 335
 Leu Val Lys Gly Leu Ser Asn Ala Cys Ala Leu Leu Pro Asp Pro Ala
 340 345 350
 Arg Thr Lys Cys Gln Glu Val Val Gly Thr Phe Asp Pro Ser Leu Leu
 355 360 365
 Asp Asp Phe Ile His Glu Val Asn Pro Ser Ser Leu Cys Gly Val Ile
 370 375 380
 Gly Leu Cys Thr Ala Leu Pro Glu Leu Val Glu Ala Leu Glu Gln Pro
 385 390 395 400
 Ala Pro Arg Ile Val Ser Ala Leu Leu Lys Glu Pro Thr Pro Pro Lys
 405 410 415
 Gln Pro Ala Gln Pro Lys Gln Ser Ala Leu Pro Ala His Val Pro Pro
 420 425 430
 Gln Lys Asn Gly Gly Phe Cys Glu Val Phe Lys Lys Leu Val Leu Tyr
 435 440 445
 Leu Glu His Asn Leu Glu Lys Asn Ser Thr Lys Glu Glu Ile Leu Ala
 450 455 460
 Ala Leu Glu Lys Gly Cys Ser Phe Leu Pro Asp Pro Tyr Gln Lys Gln
 465 470 475 480
 Cys Asp Asp Phe Val Ala Glu Tyr Glu Pro Leu Leu Leu Glu Ile Leu
 485 490 495
 Val Glu Val Met Asp Pro Gly Phe Val Cys Ser Lys Ile Gly Val Cys
 500 505 510
 Pro Ser Ala Tyr Lys Leu Leu Leu Gly Thr Glu Lys Cys Val Trp Gly
 515 520 525
 Pro Ser Tyr Trp Cys Gln Asn Met Glu Thr Ala Ala Arg Cys Asn Ala
 530 535 540
 Val Asp His Cys Lys Arg His Val Trp Asn
 545 550

<210> 231

<211> 419

<212> DNA

<213> Mus musculus

<400> 231

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ctgccccctgc agccccctgcc cggcgctcggg gtccggagtg cagtgagtg aagaagctct 120
tcagcacaga gacgtcacta caggtccttc ggcgcatcca cacaggtagg cggccatacc 180
cctgtccaga ctgtggcaag gccttcggcc agagtaccca tctgaaagac cacagacgcc 240
tacacacagg cgagcggccc ttgtcggtgt aagtgtgtgg caaggccttt gccatctcca 300
tgcgctctgga agaacatcgc cgcattccaca cgggtgagcg accctactcc tgtcctgact 360
gtggcaagag ctaccgttcc ttctccaatc tctggaagca cgcgaagatc caccagctt 419
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<210> 232

<211> 277

<212> DNA

<213> Mus musculus

<400> 232

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gcattgatta agtctgagac tgagattttt gcactggtaa agttttgatc tgtagtagtg 120
ctatttttat ttccatcata gatgaaaata tacgatttgt tcaacttcca cttcaciaaac 180
atttcttcgg tgctttgcgc ctccacatta cggacgatgc aagggatgac cacagtttca 240
ttgcatgaag tgaactctat ggagttgacg ttactaa 277
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<210> 233

<211> 3428

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (365).. (1114)

<400> 233

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 cccactccct agtcggtccc cttagtaggc ctgtcggatc ggggacgtgg ggcgagctga 180
 gagcaggccc ggggtgggtg gtcaccgtgg tgaagacgtg gcigtcaaga tgatagaagt 240
 actgacaact gactctcaga aactgctaca ccagctgaac accctgttgg aacaggagtc 300
 tagatgtcag ccaaaggtct gcggcttgaa actaattgag tcggcccatg ataatggcct 360
 caga atg act gca aga tta cgg gac ttt gaa gta aaa gat cta ctt agt 409

Met Thr Ala Arg Leu Arg Asp Phe Glu Val Lys Asp Leu Leu Ser

1 5 10 15

cta act cag ttc ttt ggc ttt gac acg gag aca ttt tcc cta gct gtg 457
 Leu Thr Gln Phe Phe Gly Phe Asp Thr Glu Thr Phe Ser Leu Ala Val

20 25 30

aat tta ctg gac aga ttc ttg tct aaa atg aag gta cag gcg aag cat 505
 Asn Leu Leu Asp Arg Phe Leu Ser Lys Met Lys Val Gln Ala Lys His

35 40 45

ctt ggg tgt gtt gga ctg agc tgc ttt tat ttg gct gtg aaa gcg act 553
 Leu Gly Cys Val Gly Leu Ser Cys Phe Tyr Leu Ala Val Lys Ala Thr

50 55 60

gaa gag gaa agg aat gtc cca ctg gcg act gat ttg atc cga ata agt 601
 Glu Glu Glu Arg Asn Val Pro Leu Ala Thr Asp Leu Ile Arg Ile Ser

65 70 75

cag tat agg ttc acg gtt tca gac ctg atg aga atg gag aag att gtg	649
Gln Tyr Arg Phe Thr Val Ser Asp Leu Met Arg Met Glu Lys Ile Val	
80 85 90 95	
ttg gag aaa gtg tgt tgg aaa gtc aaa gct act act gcc ttt caa ttt	697
Leu Glu Lys Val Cys Trp Lys Val Lys Ala Thr Thr Ala Phe Gln Phe	
100 105 110	
ctg cag ctc tat tat tca ctc gtt cac gac acc ttg cca ttt gag agg	745
Leu Gln Leu Tyr Tyr Ser Leu Val His Asp Thr Leu Pro Phe Glu Arg	
115 120 125	
aga aac gat ctg aat ttt gaa aga cta gaa gcc caa ctt aag gcc tgc	793
Arg Asn Asp Leu Asn Phe Glu Arg Leu Glu Ala Gln Leu Lys Ala Cys	
130 135 140	
cac tgc agg atc ata ttt tct aag gca aag cct tct gtg ctg gcg cta	841
His Cys Arg Ile Ile Phe Ser Lys Ala Lys Pro Ser Val Leu Ala Leu	
145 150 155	
tct atc ctt gcg ttg gag atc caa gca ctg aaa tac gta gag tta aca	889
Ser Ile Leu Ala Leu Glu Ile Gln Ala Leu Lys Tyr Val Glu Leu Thr	
160 165 170 175	
gaa gga gta gaa tgt att cag aaa cat tcc aag ata agt ggc cga gat	937
Glu Gly Val Glu Cys Ile Gln Lys His Ser Lys Ile Ser Gly Arg Asp	
180 185 190	
ttg acc ttc tgg caa gag ctt gtt tcc aag tgt tta act gaa tat tca	985
Leu Thr Phe Trp Gln Glu Leu Val Ser Lys Cys Leu Thr Glu Tyr Ser	
195 200 205	
tca aac aag tgc tcc aaa cct aac ggt cag aag ttg aaa tgg att gtg	1033
Ser Asn Lys Cys Ser Lys Pro Asn Gly Gln Lys Leu Lys Trp Ile Val	
210 215 220	
tct gga cgc act gca cgg caa ctg aag cac agt tat tat aga ata act	1081
Ser Gly Arg Thr Ala Arg Gln Leu Lys His Ser Tyr Tyr Arg Ile Thr	

225	230	235	
cac ctc cca acg att cct gag acc att tgt tag ttgataaatc tggttgttat 1134			
His Leu Pro Thr Ile Pro Glu Thr Ile Cys			
240	245	250	
tctctgtata cagaaaattt tccagtaiga tcattttctg ctacaactga agaattgaaa 1194			
tactatcttc aatataaaga atatgggatg aaaacataaa ggaaaagtga attgttgact 1254			
ggctctagata gagaatactg gaaggcaatc actgtgtaca gtgcgtagca gttttaagag 1314			
aaaagacata tcaaaccctt agatatacgc taatactttt catcaaaaga ttagcgtagt 1374			
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aatgcatggc agcacatccc tttaatccca gcactagaga ggcagagaca ggtagatctc 1854			
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gtttagaagg gaagcctgac aacctgactt cattcttcag gaccacatg atggaaggag 2034			
agaacgaaga actcccaagt tctctcacat atgcacatac ctaccaccc cccgcaggaa 2094			
atacatgac atgcgtctga gatatacca gttcaccttt agcagctcgc agtttgttagg 2154			
cagatttctg itaagttggg tctgtgttgt ttgcctatgt agcaggatta cagcagcagc 2214			
aaaaacggtc cctcaagtct tctgcccact ctgacctgag tttcctacgg tacaggattt 2274			
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catctgactt cccagatttg atcaatatat tcttaggttg tattaaaaat ggtaaactgc 2514			
ttaattttaa tctcaaaatt taaattatga ggtttacata aaaaccaaca tttcatgaat 2574			
gcacttttaa ggtattaaaa ggggtactta agcggtaaat ggtttcttgg caccataac 2634			

caagtaatag ttaatttaca ggtgggattt ttttttattg ctatgagaat tacattttaa 2694
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 tttcttctag agaatagggt tttgtatcca taataaaaaga aaaatttgct agaactgctg 2814
 cticaaicta atcccatttg agagaattgt ctttactgtc ttaataactg gatgaattat 2874
 cactctgaaa atgtatttat tgcactaaag ttagtttagg cttgataaaa cactccagac 2934
 atttttacta cagactgttt ctataaaact gccattgcit ctaatggaga attttatttt 2994
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 gtatgatcca cactgtttaa acataggcag cagctcaggg ccttgacag cctgagtcaa 3174
 cctagagtag ctggaacat ttigacatgt aatggataag gaaattatcc attgagaagc 3234
 tgaacaataa accaaagaac ggggtgtattt tacccttaac ctctgtaaac cagtttacac 3294
 tgagaacact tcagttcttc cttaaagggt ataggcttca gtctgaaaac aatattgatt 3354
 tggagtggac agaagttaac taaccaacta ccattatgtt ttgaatacac ctttcaataa 3414
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<210> 234

<211> 249

<212> PRT

<213> Mus musculus

<400> 234

Met Thr Ala Arg Leu Arg Asp Phe Glu Val Lys Asp Leu Leu Ser Leu

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Thr Gln Phe Phe Gly Phe Asp Thr Glu Thr Phe Ser Leu Ala Val Asn

20 25 30

Leu Leu Asp Arg Phe Leu Ser Lys Met Lys Val Gln Ala Lys His Leu

35 40 45

Gly Cys Val Gly Leu Ser Cys Phe Tyr Leu Ala Val Lys Ala Thr Glu

50 55 60

Glu Glu Arg Asn Val Pro Leu Ala Thr Asp Leu Ile Arg Ile Ser Gln
 65 70 75 80
 Tyr Arg Phe Thr Val Ser Asp Leu Met Arg Met Glu Lys Ile Val Leu
 85 90 95
 Glu Lys Val Cys Trp Lys Val Lys Ala Thr Thr Ala Phe Gln Phe Leu
 100 105 110
 Gln Leu Tyr Tyr Ser Leu Val His Asp Thr Leu Pro Phe Glu Arg Arg
 115 120 125
 Asn Asp Leu Asn Phe Glu Arg Leu Glu Ala Gln Leu Lys Ala Cys His
 130 135 140
 Cys Arg Ile Ile Phe Ser Lys Ala Lys Pro Ser Val Leu Ala Leu Ser
 145 150 155 160
 Ile Leu Ala Leu Glu Ile Gln Ala Leu Lys Tyr Val Glu Leu Thr Glu
 165 170 175
 Gly Val Glu Cys Ile Gln Lys His Ser Lys Ile Ser Gly Arg Asp Leu
 180 185 190
 Thr Phe Trp Gln Glu Leu Val Ser Lys Cys Leu Thr Glu Tyr Ser Ser
 195 200 205
 Asn Lys Cys Ser Lys Pro Asn Gly Gln Lys Leu Lys Trp Ile Val Ser
 210 215 220
 Gly Arg Thr Ala Arg Gln Leu Lys His Ser Tyr Tyr Arg Ile Thr His
 225 230 235 240
 Leu Pro Thr Ile Pro Glu Thr Ile Cys
 245

<210> 235

<211> 660

<212> DNA

<213> Mus musculus

<400> 235

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 gcgcatggga cccgcgacga cgagtacgac tacctcttta aagtigtctt tattggagat 120
 tctgggtgttg gaaagagtaa cctcctgtct cgatttactc gaaatgagtt taatciggaa 180
 agcaagagta ccattggagt agagtttgca acaagaagca tccaggttga tgggaaaaca 240
 ataaaggcac agatatggga cacagcaggg caggagcggc acagggctat aacgtctgca 300
 tactatcgtg gagcagtagg tgccittatg gtttatgaca ttgctaagca tctcacatat 360
 gaaaatgtag agcgatggct gaaagaactg agagatcatg ctgatagtaa cattgttattc 420
 atgcttgttg gcaataagag tgatttacgt catctcaggg cagttcctac agatgaagca 480
 agagcttttg cagagaagaa tgggtgtgtca ttcatgaga catctgtctt agattctaca 540
 aatgttgaag ctgcttttca gacaattcta acagagatat agggcattgt ttctcagaag 600
 ccatgtgccg acagacttga aatgacaigt ctccaagcac aatgggtgtc tattcagttc 660

<210> 236

<211> 930

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (930)

<400> 236

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 Met Asp Asp Lys Ala Phe Thr Lys Glu Leu Asp Gln Trp Val Glu Gln
 1 5 10 15
 ctg aac gag tgt aag cag ctg aac gag aac caa gtg cgg acg ctg tgc 96
 Leu Asn Glu Cys Lys Gln Leu Asn Glu Asn Gln Val Arg Thr Leu Cys

20	25	30	
gag aag gct aag gaa att tta acg aaa gaa tca aat gtg caa gag gtc			144
Glu Lys Ala Lys Glu Ile Leu Thr Lys Glu Ser Asn Val Gln Glu Val			
35	40	45	
cgc tgt cct gtt acc gtc tgt gga gat gtg cat ggc caa ttc cat gac			192
Arg Cys Pro Val Thr Val Cys Gly Asp Val His Gly Gln Phe His Asp			
50	55	60	
ctt atg gag ctc ttc aga att ggt ggg aaa tca cca gat acg aac tac			240
Leu Met Glu Leu Phe Arg Ile Gly Gly Lys Ser Pro Asp Thr Asn Tyr			
65	70	75	80
cta ttc atg ggg gac tat gta gac aga ggc tac tac tct gtg gag act			288
Leu Phe Met Gly Asp Tyr Val Asp Arg Gly Tyr Tyr Ser Val Glu Thr			
85	90	95	
gtg act ctt ctt gta gca tta aag gtg cgc tat cca gag cgc atc aca			336
Val Thr Leu Leu Val Ala Leu Lys Val Arg Tyr Pro Glu Arg Ile Thr			
100	105	110	
ata ttg cga gga aat cat gaa agc cgg cag atc aca caa gtg tat ggc			384
Ile Leu Arg Gly Asn His Glu Ser Arg Gln Ile Thr Gln Val Tyr Gly			
115	120	125	
ttt tat gat gag tgc cta cgg aag tat gga aat gcc aac gtg tgg aaa			432
Phe Tyr Asp Glu Cys Leu Arg Lys Tyr Gly Asn Ala Asn Val Trp Lys			
130	135	140	
tac ttt aca gat ctc ttt gat tat ctt cca ctt aca gct tta gta gat			480
Tyr Phe Thr Asp Leu Phe Asp Tyr Leu Pro Leu Thr Ala Leu Val Asp			
145	150	155	160
gga cag ata ttc tgc ctc cac ggt ggc ctg tct cca tcc ata gat aca			528
Gly Gln Ile Phe Cys Leu His Gly Gly Leu Ser Pro Ser Ile Asp Thr			
165	170	175	
ctg gac cac ata aga gcc ctg gat cgc ttg caa gaa gtt cca cat gag			576

Leu Asp His Ile Arg Ala Leu Asp Arg Leu Gln Glu Val Pro His Glu
 180 185 190
 ggc cca atg tgt gat ctc tta tgg tca gat ccg gat gac cgt ggc ggc 624
 Gly Pro Met Cys Asp Leu Leu Trp Ser Asp Pro Asp Asp Arg Gly Gly
 195 200 205
 tgg ggc att tct cca cgt ggt gct ggc tac aca ttt gga caa gac att 672
 Trp Gly Ile Ser Pro Arg Gly Ala Gly Tyr Thr Phe Gly Gln Asp Ile
 210 215 220
 tct gaa aca ttt aac cat gcc aac ggt ctc aca ctg gtg tct cgt gct 720
 Ser Glu Thr Phe Asn His Ala Asn Gly Leu Thr Leu Val Ser Arg Ala
 225 230 235 240
 cac cag ctt gta atg gaa gga tat aac tgg tgc cat gat cgg aat gtg 768
 His Gln Leu Val Met Glu Gly Tyr Asn Trp Cys His Asp Arg Asn Val
 245 250 255
 gtc acc att ttt agt gcg ccc aat tac tgc tac cgt tgt ggg aac cag 816
 Val Thr Ile Phe Ser Ala Pro Asn Tyr Cys Tyr Arg Cys Gly Asn Gln
 260 265 270
 gct gct atc atg gaa tta gat gac act tta aaa tat tca ttt ctt cag 864
 Ala Ala Ile Met Glu Leu Asp Asp Thr Leu Lys Tyr Ser Phe Leu Gln
 275 280 285
 ttt gac cca gca cct cgt cgt gga gag cct cat gtg acc cgg cgc acc 912
 Phe Asp Pro Ala Pro Arg Arg Gly Glu Pro His Val Thr Arg Arg Thr
 290 295 300
 cca gac tac ttc cta taa 930
 Pro Asp Tyr Phe Leu
 305 310

<210> 237

<211> 309

<212> PRT

<213> Mus musculus

<400> 237

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Leu Asn Glu Cys Lys Gln Leu Asn Glu Asn Gln Val Arg Thr Leu Cys
          20             25             30
Glu Lys Ala Lys Glu Ile Leu Thr Lys Glu Ser Asn Val Gln Glu Val
      35             40             45
Arg Cys Pro Val Thr Val Cys Gly Asp Val His Gly Gln Phe His Asp
      50             55             60
Leu Met Glu Leu Phe Arg Ile Gly Gly Lys Ser Pro Asp Thr Asn Tyr
      65             70             75             80
Leu Phe Met Gly Asp Tyr Val Asp Arg Gly Tyr Tyr Ser Val Glu Thr
          85             90             95
Val Thr Leu Leu Val Ala Leu Lys Val Arg Tyr Pro Glu Arg Ile Thr
      100             105             110
Ile Leu Arg Gly Asn His Glu Ser Arg Gln Ile Thr Gln Val Tyr Gly
      115             120             125
Phe Tyr Asp Glu Cys Leu Arg Lys Tyr Gly Asn Ala Asn Val Trp Lys
      130             135             140
Tyr Phe Thr Asp Leu Phe Asp Tyr Leu Pro Leu Thr Ala Leu Val Asp
      145             150             155             160
Gly Gln Ile Phe Cys Leu His Gly Gly Leu Ser Pro Ser Ile Asp Thr
          165             170             175
Leu Asp His Ile Arg Ala Leu Asp Arg Leu Gln Glu Val Pro His Glu
          180             185             190
Gly Pro Met Cys Asp Leu Leu Trp Ser Asp Pro Asp Asp Arg Gly Gly

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195 200 205
 Trp Gly Ile Ser Pro Arg Gly Ala Gly Tyr Thr Phe Gly Gln Asp Ile
 210 215 220
 Ser Glu Thr Phe Asn His Ala Asn Gly Leu Thr Leu Val Ser Arg Ala
 225 230 235 240
 His Gln Leu Val Met Glu Gly Tyr Asn Trp Cys His Asp Arg Asn Val
 245 250 255
 Val Thr Ile Phe Ser Ala Pro Asn Tyr Cys Tyr Arg Cys Gly Asn Gln
 260 265 270
 Ala Ala Ile Met Glu Leu Asp Asp Thr Leu Lys Tyr Ser Phe Leu Gln
 275 280 285
 Phe Asp Pro Ala Pro Arg Arg Gly Glu Pro His Val Thr Arg Arg Thr
 290 295 300
 Pro Asp Tyr Phe Leu
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<210> 238

<211> 1203

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (67).. (873)

<400> 238

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 Met Ala Val Asn Val Tyr Ser Thr Ser Val Thr Ser Asp Asn

1	5	10	
cta agt cga cat gac atg ctg gct tgg atc aat gaa tct ctg cag ttg	156		
Leu Ser Arg His Asp Met Leu Ala Trp Ile Asn Glu Ser Leu Gln Leu			
15	20	25	30
aat ctg aca aag ata gaa cag ttg tgt tca ggg gct gca tat tgt cag	204		
Asn Leu Thr Lys Ile Glu Gln Leu Cys Ser Gly Ala Ala Tyr Cys Gln			
35	40	45	
ttt atg gac atg ctc ttc cct gga tcc att gcc ttg aag aaa gtg aaa	252		
Phe Met Asp Met Leu Phe Pro Gly Ser Ile Ala Leu Lys Lys Val Lys			
50	55	60	
ttc caa gct aag cta gaa cat gaa tat atc cag aac ttc aaa ata cta	300		
Phe Gln Ala Lys Leu Glu His Glu Tyr Ile Gln Asn Phe Lys Ile Leu			
65	70	75	
caa gca ggc ttc aag agg atg ggc gtt gac aaa ata att cct gtg gat	348		
Gln Ala Gly Phe Lys Arg Met Gly Val Asp Lys Ile Ile Pro Val Asp			
80	85	90	
aaa tta gta aaa gga aaa ttt cag gac aat ttt gaa ttt gtt caa tgg	396		
Lys Leu Val Lys Gly Lys Phe Gln Asp Asn Phe Glu Phe Val Gln Trp			
95	100	105	110
ttc aag aag ttt ttt gat gca aat tat gat gga aaa gag tat gat cct	444		
Phe Lys Lys Phe Phe Asp Ala Asn Tyr Asp Gly Lys Glu Tyr Asp Pro			
115	120	125	
gta gct gcc aga caa ggt caa gaa act gca gtg gct cct tct ctt gtc	492		
Val Ala Ala Arg Gln Gly Gln Glu Thr Ala Val Ala Pro Ser Leu Val			
130	135	140	
gcc cca gct ttg agt aaa ccg aag aaa cct ctc ggc tcc agt act gca	540		
Ala Pro Ala Leu Ser Lys Pro Lys Lys Pro Leu Gly Ser Ser Thr Ala			
145	150	155	
gcc cca cag aga ccc att gca aca cag agg act act gca gct cct aag	588		

Ala Pro Gln Arg Pro Ile Ala Thr Gln Arg Thr Thr Ala Ala Pro Lys
 160 165 170
 gct ggc ccc gga atg gtg cga aag aat cct ggt gtg ggc aat gga gat 636
 Ala Gly Pro Gly Met Val Arg Lys Asn Pro Gly Val Gly Asn Gly Asp
 175 180 185 190
 gat gaa gca gct gaa ttg atg cag cag gtc aaa gta ctg aag ctt act 684
 Asp Glu Ala Ala Glu Leu Met Gln Gln Val Lys Val Leu Lys Leu Thr
 195 200 205
 gtt gaa gac ttg gag aag gag aga gac ttc tac ttc gga aag cta agg 732
 Val Glu Asp Leu Glu Lys Glu Arg Asp Phe Tyr Phe Gly Lys Leu Arg
 210 215 220
 aac att gaa ctg att tgc cag gag aac gag ggg gaa aac gac cct gta 780
 Asn Ile Glu Leu Ile Cys Gln Glu Asn Glu Gly Glu Asn Asp Pro Val
 225 230 235
 ctg cag agg att gta gat att ctt tat gcc aca gat gaa ggc ttt gtg 828
 Leu Gln Arg Ile Val Asp Ile Leu Tyr Ala Thr Asp Glu Gly Phe Val
 240 245 250
 ata cct gat gaa ggg ggc cca cag gag gaa caa gaa gag tat taa 873
 Ile Pro Asp Glu Gly Gly Pro Gln Glu Glu Gln Glu Glu Tyr
 255 260 265
 gcagcctgga ccagcagagc aacatccgaa gtcttcactc caaatcatgt gcttaactgt 933
 taatactccc ttttattaat cttagaggat tctactggttt cttttcataa gcaaaaagta 993
 cctcttcttc aaagtgcact ttgcagaagt ctacacttct ccgatgagtt tgagttagga 1053
 gctttggcct tgtagcagag cagtattaac atctagttagg ttaccaggg gaacaagagg 1113
 ccaaccatgg ggctcttcat gtggaigctg gccacactga ctgatggaga aggggggttta 1173
 taatacgaga ggtgacaacc tcagaaatgc 1203

<210> 239

<211> 268

<212> PRT

<213> Mus musculus

<400> 239

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Arg His Asp Met Leu Ala Trp Ile Asn Glu Ser Leu Gln Leu Asn Leu
      20             25             30
Thr Lys Ile Glu Gln Leu Cys Ser Gly Ala Ala Tyr Cys Gln Phe Met
      35             40             45
Asp Met Leu Phe Pro Gly Ser Ile Ala Leu Lys Lys Val Lys Phe Gln
      50             55             60
Ala Lys Leu Glu His Glu Tyr Ile Gln Asn Phe Lys Ile Leu Gln Ala
      65             70             75             80
Gly Phe Lys Arg Met Gly Val Asp Lys Ile Ile Pro Val Asp Lys Leu
      85             90             95
Val Lys Gly Lys Phe Gln Asp Asn Phe Glu Phe Val Gln Trp Phe Lys
      100            105            110
Lys Phe Phe Asp Ala Asn Tyr Asp Gly Lys Glu Tyr Asp Pro Val Ala
      115            120            125
Ala Arg Gln Gly Gln Glu Thr Ala Val Ala Pro Ser Leu Val Ala Pro
      130            135            140
Ala Leu Ser Lys Pro Lys Lys Pro Leu Gly Ser Ser Thr Ala Ala Pro
      145            150            155            160
Gln Arg Pro Ile Ala Thr Gln Arg Thr Thr Ala Ala Pro Lys Ala Gly
      165            170            175
Pro Gly Met Val Arg Lys Asn Pro Gly Val Gly Asn Gly Asp Asp Glu
      180            185            190
Ala Ala Glu Leu Met Gln Gln Val Lys Val Leu Lys Leu Thr Val Glu

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195	200	205
Asp Leu Glu Lys Glu Arg Asp Phe Tyr Phe Gly Lys Leu Arg Asn Ile		
210	215	220
Glu Leu Ile Cys Gln Glu Asn Glu Gly Glu Asn Asp Pro Val Leu Gln		
225	230	235
Arg Ile Val Asp Ile Leu Tyr Ala Thr Asp Glu Gly Phe Val Ile Pro		
245	250	255
Asp Glu Gly Gly Pro Gln Glu Glu Gln Glu Glu Tyr		
260	265	

<210> 240

<211> 667

<212> DNA

<213> Mus musculus

<400> 240

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ggatctttaga aaacgacccc acggaacttg acctcatggt ctgcatagac gaagagaact 180
ttgggcagac ataccaagtg gatctgaagc ccaacgggtc agaaataatg gtaaccaatg 240
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actggagaca gcactctatt tacaagaacg gctactgccc caaccaccct gtcattccagt 480
ggttctggaa ggccgtgctc ctgatggatg ctgagaagcg catccggita ctacagtittg 540
tcacaggcac ctccagagta cccaatgaatg gatttgccga actctatggt tccaatggtc 600
ctcagctggt tacaatagag caatggggca gtccgaaaaa ctaccagagc tctacatgct 660
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<210> 241

<211> 2089

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (157).. (780)

<400> 241

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gccgggcagc tccgaggagc ctgctggagc cggaatcgga cgtctctgtt gcggcctgcg 120
ttgtgtctcc tccctcgttg accctgcgct tcaagg atg acc tct agg aag aaa 174

Met Thr Ser Arg Lys Lys

1

5

gtg ttg ctg aag gtc atc atc ctg ggg gac tct ggt gtt gga aag acc 222
Val Leu Leu Lys Val Ile Ile Leu Gly Asp Ser Gly Val Gly Lys Thr

10

15

20

tct ctc atg aac cag tat gtg aac aag aag ttc agt aac cag tac aaa 270
Ser Leu Met Asn Gln Tyr Val Asn Lys Lys Phe Ser Asn Gln Tyr Lys

25

30

35

gcc aca ata gga gcg gac ttt ctg acc aag gag gtg atg gtg gac gac 318
Ala Thr Ile Gly Ala Asp Phe Leu Thr Lys Glu Val Met Val Asp Asp

40

45

50

aga ctt gtt acc atg cag atc tgg gac aca gcc ggt caa gaa cgg ttc 366
Arg Leu Val Thr Met Gln Ile Trp Asp Thr Ala Gly Gln Glu Arg Phe

55

60

65

70

cag tct ctt ggt gtg gcc ttc tac aga ggt gca gat tgc tgt gtt ctg 414
Gln Ser Leu Gly Val Ala Phe Tyr Arg Gly Ala Asp Cys Cys Val Leu

75	80	85	
gtg ttt gat gtg act gcc ccc aac act ttc aaa acc ctc gac agc tgg	462		
Val Phe Asp Val Thr Ala Pro Asn Thr Phe Lys Thr Leu Asp Ser Trp			
90	95	100	
aga gac gag ttt ctc atc cag gcc agc ccc cgg gat ccc gag aac ttc	510		
Arg Asp Glu Phe Leu Ile Gln Ala Ser Pro Arg Asp Pro Glu Asn Phe			
105	110	115	
cct ttt gtt gtg ttg gga aac aag att gac ctg gaa aac aga caa gtg	558		
Pro Phe Val Val Leu Gly Asn Lys Ile Asp Leu Glu Asn Arg Gln Val			
120	125	130	
gcc aca aag agg gca cag gct tgg tgc tac agg aaa aac aac att cct	606		
Ala Thr Lys Arg Ala Gln Ala Trp Cys Tyr Arg Lys Asn Asn Ile Pro			
135	140	145	150
tac ttc gag acc agt gcc aag gag gcc atc aat gtg gag cag gcc ttc	654		
Tyr Phe Glu Thr Ser Ala Lys Glu Ala Ile Asn Val Glu Gln Ala Phe			
155	160	165	
cag aca att gct cgg aat gcc ctt aaa cag gaa aca gaa gtg gaa ctg	702		
Gln Thr Ile Ala Arg Asn Ala Leu Lys Gln Glu Thr Glu Val Glu Leu			
170	175	180	
tac aat gaa ttc cct gaa ccc atc aaa ctg gac aag aat gac cgg gcc	750		
Tyr Asn Glu Phe Pro Glu Pro Ile Lys Leu Asp Lys Asn Asp Arg Ala			
185	190	195	
aag gcc tcc gca gaa agc tgc agt tgt tga aggggcagtg agcacagagt	800		
Lys Ala Ser Ala Glu Ser Cys Ser Cys			
200	205		
ccttcacaga ccaagaacac acacgtaggc cttcaatatg cgtccctcct cctccaaaca	860		
gaccagaacg tgagctctca catccagctg ccaaaagaaa ctccaccgaa cagttaccca	920		
acacacacac atacacaaaa cacactegtg cacacaaaaa cacatacaca caacacacac	980		
acagcaagca aactccagcc tgtgcctgtc agggctcctg gggcagctgc gcctcgtggg	1040		

ccigtgtatg gcaggcataat ggcagagacc ctgggtgctc tggggtgcag tgggcatgga 1100
 aagcttactc tttttgtcca ctggagagtg agagaactgt tcacagtcca tctgtgtcta 1160
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<210> 242

<211> 207

<212> PRT

<213> Mus musculus

<400> 242

Met Thr Ser Arg Lys Lys Val Leu Leu Lys Val Ile Ile Leu Gly Asp

1

5

10

15

Ser Gly Val Gly Lys Thr Ser Leu Met Asn Gln Tyr Val Asn Lys Lys

20

25

30

Phe Ser Asn Gln Tyr Lys Ala Thr Ile Gly Ala Asp Phe Leu Thr Lys
 35 40 45
 Glu Val Met Val Asp Asp Arg Leu Val Thr Met Gln Ile Trp Asp Thr
 50 55 60
 Ala Gly Gln Glu Arg Phe Gln Ser Leu Gly Val Ala Phe Tyr Arg Gly
 65 70 75 80
 Ala Asp Cys Cys Val Leu Val Phe Asp Val Thr Ala Pro Asn Thr Phe
 85 90 95
 Lys Thr Leu Asp Ser Trp Arg Asp Glu Phe Leu Ile Gln Ala Ser Pro
 100 105 110
 Arg Asp Pro Glu Asn Phe Pro Phe Val Val Leu Gly Asn Lys Ile Asp
 115 120 125
 Leu Glu Asn Arg Gln Val Ala Thr Lys Arg Ala Gln Ala Trp Cys Tyr
 130 135 140
 Arg Lys Asn Asn Ile Pro Tyr Phe Glu Thr Ser Ala Lys Glu Ala Ile
 145 150 155 160
 Asn Val Glu Gln Ala Phe Gln Thr Ile Ala Arg Asn Ala Leu Lys Gln
 165 170 175
 Glu Thr Glu Val Glu Leu Tyr Asn Glu Phe Pro Glu Pro Ile Lys Leu
 180 185 190
 Asp Lys Asn Asp Arg Ala Lys Ala Ser Ala Glu Ser Cys Ser Cys
 195 200 205

<210> 243

<211> 2362

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (81).. (734)

<400> 243

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 agcactgagc ggcgctcaga atg gaa gcc atc gcc aaa tat gac ttc aaa gct 113

Met Glu Ala Ile Ala Lys Tyr Asp Phe Lys Ala

1

5

10

act gct gac gat gag ctg agc ttc aaa agg ggg gac atc ctt aag gtt 161

Thr Ala Asp Asp Glu Leu Ser Phe Lys Arg Gly Asp Ile Leu Lys Val

15

20

25

ttg aat gaa gaa tgt gac cag aac tgg tat aag gca gaa ctc aat ggg 209

Leu Asn Glu Glu Cys Asp Gln Asn Trp Tyr Lys Ala Glu Leu Asn Gly

30

35

40

aaa gat ggc ttc atc ccc aag aat tac ata gaa atg aaa cca cat ccg 257

Lys Asp Gly Phe Ile Pro Lys Asn Tyr Ile Glu Met Lys Pro His Pro

45

50

55

tgg ttt ttt ggc aaa atc ccc aga gcc aag gca gaa gaa atg ctc agc 305

Trp Phe Phe Gly Lys Ile Pro Arg Ala Lys Ala Glu Glu Met Leu Ser

60

65

70

75

aaa cag cgg cat gac ggg gcc ttc ctg atc cga gag agc gag agc gct 353

Lys Gln Arg His Asp Gly Ala Phe Leu Ile Arg Glu Ser Glu Ser Ala

80

85

90

cct ggg gac ttc tcc ctg tcc gtc aag ttt gga aat gat gtg cag cac 401

Pro Gly Asp Phe Ser Leu Ser Val Lys Phe Gly Asn Asp Val Gln His

95

100

105

ttc aag gtg ctc cgc gac gga gcc ggg aag tat ttc ctg tgg gtg gtg 449

Phe Lys Val Leu Arg Asp Gly Ala Gly Lys Tyr Phe Leu Trp Val Val

110

115

120


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aag ttt aat tct ttg aat gag ctg gta gat tac cac aga tca aca tcc 497
Lys Phe Asn Ser Leu Asn Glu Leu Val Asp Tyr His Arg Ser Thr Ser
      125              130              135

gtg tcc agg aac cag cag ata ttc tta cgg gac ata gaa cag atg cca 545
Val Ser Arg Asn Gln Gln Ile Phe Leu Arg Asp Ile Glu Gln Met Pro
140              145              150              155

cag cag cca acc tac gtc cag gcg ctc ttt gac ttt gac ccc cag gag 593
Gln Gln Pro Thr Tyr Val Gln Ala Leu Phe Asp Phe Asp Pro Gln Glu
      160              165              170

gat ggc gag ctg ggc ttt cgc aga gga gac ttc att cat gtc atg gat 641
Asp Gly Glu Leu Gly Phe Arg Arg Gly Asp Phe Ile His Val Met Asp
      175              180              185

aac tca gat ccc aat tgg tgg aaa ggg gcc tgc cac ggg cag acc ggc 689
Asn Ser Asp Pro Asn Trp Trp Lys Gly Ala Cys His Gly Gln Thr Gly
      190              195              200

atg ttt ccc cgc aat tat gtc acc cca gtg aac cgg aac gtc taa 734
Met Phe Pro Arg Asn Tyr Val Thr Pro Val Asn Arg Asn Val
      205              210              215

gaagcaaaag agattatitta aagaaagtga aaagttaaga cgttcacaa gaattacacc 794
cacacgctgc ctgtcacagc ctgtgaggga acgcagaaca cctggctggg tcccacgggt 854
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ccacatatag tccagctgat gccaataata aaagacaaga aaccaagtgg gctggtatgt 1094
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cctccagcct caggcctgga gcattccatc aaagtiggaa ttaggggaag gaggcccact 1274
gacctccccg gtctcctgag agtcagactg caggccctcc cctctccac tgcttcctt 1334
caggtgtttt gacgtttttt tgtttgtttg ttgtttttt ttaaatagtg ctttgtctt 1394

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<210> 244

<211> 217

<212> PRT

<213> Mus musculus

<400> 244

Met	Glu	Ala	Ile	Ala	Lys	Tyr	Asp	Phe	Lys	Ala	Thr	Ala	Asp	Asp	Glu
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Leu	Ser	Phe	Lys	Arg	Gly	Asp	Ile	Leu	Lys	Val	Leu	Asn	Glu	Glu	Cys
				20					25					30	
Asp	Gln	Asn	Trp	Tyr	Lys	Ala	Glu	Leu	Asn	Gly	Lys	Asp	Gly	Phe	Ile

35	40	45
Pro Lys Asn Tyr Ile Glu Met Lys Pro His Pro Trp Phe Phe Gly Lys		
50	55	60
Ile Pro Arg Ala Lys Ala Glu Glu Met Leu Ser Lys Gln Arg His Asp		
65	70	75
Gly Ala Phe Leu Ile Arg Glu Ser Glu Ser Ala Pro Gly Asp Phe Ser		
85	90	95
Leu Ser Val Lys Phe Gly Asn Asp Val Gln His Phe Lys Val Leu Arg		
100	105	110
Asp Gly Ala Gly Lys Tyr Phe Leu Trp Val Val Lys Phe Asn Ser Leu		
115	120	125
Asn Glu Leu Val Asp Tyr His Arg Ser Thr Ser Val Ser Arg Asn Gln		
130	135	140
Gln Ile Phe Leu Arg Asp Ile Glu Gln Met Pro Gln Gln Pro Thr Tyr		
145	150	155
Val Gln Ala Leu Phe Asp Phe Asp Pro Gln Glu Asp Gly Glu Leu Gly		
165	170	175
Phe Arg Arg Gly Asp Phe Ile His Val Met Asp Asn Ser Asp Pro Asn		
180	185	190
Trp Trp Lys Gly Ala Cys His Gly Gln Thr Gly Met Phe Pro Arg Asn		
195	200	205
Tyr Val Thr Pro Val Asn Arg Asn Val		
210	215	

<210> 245

<211> 1220

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (111).. (671)

<400> 245

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gtaaaggagg caagccttcc ccgcccctcg gaaagagcgc caaacggaaa atg gaa    116
                                         Met Glu
                                         1
ggc cca aag aaa gcc cag ggc cac agc cct gta aat ggc ttg ctg aaa    164
Gly Pro Lys Lys Ala Gln Gly His Ser Pro Val Asn Gly Leu Leu Lys
      5              10              15
ggg cag gag agt cga agt caa agc agg agt cgt gag cag agc tac tca    212
Gly Gln Glu Ser Arg Ser Gln Ser Arg Ser Arg Glu Gln Ser Tyr Ser
      20              25              30
agg tcc cca tca cgg tct gct tct cca aag aga agg aaa agt gat agt    260
Arg Ser Pro Ser Arg Ser Ala Ser Pro Lys Arg Arg Lys Ser Asp Ser
      35              40              45              50
ggc tct acc tca ggt ggg tcc aag tca cag agt cgt tct cgg agc cga    308
Gly Ser Thr Ser Gly Gly Ser Lys Ser Gln Ser Arg Ser Arg Ser Arg
              55              60              65
agt gac tct cct cca agg cag gta cac cga ggt gct ccc tac aaa ggc    356
Ser Asp Ser Pro Pro Arg Gln Val His Arg Gly Ala Pro Tyr Lys Gly
              70              75              80
tca gaa gtg agg ggc tcc cgg aaa tca aag gac tgc aag tac ctc acc    404
Ser Glu Val Arg Gly Ser Arg Lys Ser Lys Asp Cys Lys Tyr Leu Thr
              85              90              95
cag aag cca cac aag tct cgt agc cgg agc tcc tct cgt tcc cga agc    452
Gln Lys Pro His Lys Ser Arg Ser Arg Ser Ser Ser Arg Ser Arg Ser

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100	105	110	
cgg tca cga gag cgg acg gac aat tct gga aaa tac aag aag aaa agt			500
Arg Ser Arg Glu Arg Thr Asp Asn Ser Gly Lys Tyr Lys Lys Lys Ser			
115	120	125	130
cat tac tat aga gat caa aga cgt gag cgc tca agg tca tat gag cgc			548
His Tyr Tyr Arg Asp Gln Arg Arg Glu Arg Ser Arg Ser Tyr Glu Arg			
	135	140	145
aca ggc cat cgc tat gag agg gac cac cct gga cac agc agg cat cgg			596
Thr Gly His Arg Tyr Glu Arg Asp His Pro Gly His Ser Arg His Arg			
	150	155	160
agg tgt gat agg atc tct ggt ggc tgc cct tgg tcc ctc cct gtt ggg			644
Arg Cys Asp Arg Ile Ser Gly Gly Cys Pro Trp Ser Leu Pro Val Gly			
	165	170	175
cac acc ttg gcg tca gtg gcc ttg tag catgatgttt ttcgaaagtg			691
His Thr Leu Ala Ser Val Ala Leu			
180	185		
tttttaattg gaccttgagg tgaatttgat tgatgagaca gtgggcaagg tgcccttcag			751
gctggcctgg ggagtgtgtg gcatctgtcc cggttaatgg tccacctcaa ctgcagacct			811
tcaggtagct ggatggaaca gcaaaggcac acgtcccat tggcgtggct tgggtgctatt			871
gacaagctgt ctcttcactc cttaaactgat actcaattac gttaagccaa gaaagatgat			931
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tgagaaaaatg gccttaatat ccccttggtt ctctattcac gttgtaaata aacatgttta			1051
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atagaaaatt gagattttta aaatgtgaag gtatttaggt ctgtgttgaa agtcatatat			1171
ttttatctgt gcaatgctga gtgcaggccc tttagagcac actggcggc			1220

<210> 246

<211> 186

<212> PRT

<213> Mus musculus

<400> 246

Met Glu Gly Pro Lys Lys Ala Gln Gly His Ser Pro Val Asn Gly Leu
 1 5 10 15
 Leu Lys Gly Gln Glu Ser Arg Ser Gln Ser Arg Ser Arg Glu Gln Ser
 20 25 30
 Tyr Ser Arg Ser Pro Ser Arg Ser Ala Ser Pro Lys Arg Arg Lys Ser
 35 40 45
 Asp Ser Gly Ser Thr Ser Gly Gly Ser Lys Ser Gln Ser Arg Ser Arg
 50 55 60
 Ser Arg Ser Asp Ser Pro Pro Arg Gln Val His Arg Gly Ala Pro Tyr
 65 70 75 80
 Lys Gly Ser Glu Val Arg Gly Ser Arg Lys Ser Lys Asp Cys Lys Tyr
 85 90 95
 Leu Thr Gln Lys Pro His Lys Ser Arg Ser Arg Ser Ser Ser Arg Ser
 100 105 110
 Arg Ser Arg Ser Arg Glu Arg Thr Asp Asn Ser Gly Lys Tyr Lys Lys
 115 120 125
 Lys Ser His Tyr Tyr Arg Asp Gln Arg Arg Glu Arg Ser Arg Ser Tyr
 130 135 140
 Glu Arg Thr Gly His Arg Tyr Glu Arg Asp His Pro Gly His Ser Arg
 145 150 155 160
 His Arg Arg Cys Asp Arg Ile Ser Gly Gly Cys Pro Trp Ser Leu Pro
 165 170 175
 Val Gly His Thr Leu Ala Ser Val Ala Leu
 180 185

<210> 247

<211> 1805

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (360).. (1739)

<400> 247

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gicttgctcc cgccccggga ggaagcgagg ggcgcggtgt aaacagagcg gcggccgtga 180
tgtcagccgg tcacatggag cctcttatgg ctcgggatgg ctctcggcgg gcgggcagct 240
gcggcagctg ctgctgtggc tcgggcggcg gcggcaagag ggggctccgg ggtcggacgg 300
tcggctctcc ctgcgctctc cgcaccgcgg cgtaaaggat gtattttgtg atgcagcg 359
atg aaa gct caa att gaa att att cca tgc aag atc tgt gga gac aaa 407
Met Lys Ala Gln Ile Glu Ile Ile Pro Cys Lys Ile Cys Gly Asp Lys
      1           5           10           15
tcg tca gga atc cat tat ggt gtc att acg tgt gaa ggc tgc aag ggc 455
Ser Ser Gly Ile His Tyr Gly Val Ile Thr Cys Glu Gly Cys Lys Gly
           20           25           30
ttt ttc agg aga agt cag cag agc aat gcc acc tac tcc tgt cct cgt 503
Phe Phe Arg Arg Ser Gln Gln Ser Asn Ala Thr Tyr Ser Cys Pro Arg
           35           40           45
cag aag aac tgt ttg att gat cgg acc agc aga aac cgc tgc cag cat 551
Gln Lys Asn Cys Leu Ile Asp Arg Thr Ser Arg Asn Arg Cys Gln His
           50           55           60
tgt cgg ctg cag aaa tgc ctg gcc gtg ggg atg tct cga gat gct gtc 599
Cys Arg Leu Gln Lys Cys Leu Ala Val Gly Met Ser Arg Asp Ala Val

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65	70	75	80	
aag ttt ggt cgg atg tcc aag aag cag aga gac agc ttg tac gcc gag	647			
Lys Phe Gly Arg Met Ser Lys Lys Gln Arg Asp Ser Leu Tyr Ala Glu				
85	90	95		
gtg cag aag cgc cga atg cag cag cag cag cga gac cac cag cag cag	695			
Val Gln Lys Arg Arg Met Gln Gln Gln Gln Arg Asp His Gln Gln Gln				
100	105	110		
cct ggg gag gcg acg ctg acg ccc acc tac aac atc tca gcc aat gga	743			
Pro Gly Glu Ala Thr Leu Thr Pro Thr Tyr Asn Ile Ser Ala Asn Gly				
115	120	125		
tcg gcg gaa ctg cat gat gac ctc agc acc tat atg gat ggg cac acc	791			
Ser Ala Glu Leu His Asp Asp Leu Ser Thr Tyr Met Asp Gly His Thr				
130	135	140		
ccc gag ggc agc aag gcg gac tca gcc gtc agc agc ttc tac ctg gac	839			
Pro Glu Gly Ser Lys Ala Asp Ser Ala Val Ser Ser Phe Tyr Leu Asp				
145	150	155	160	
atc cag ccc tcc cca gac cag tcg gga ttg gac atc aat ggg atc aaa	887			
Ile Gln Pro Ser Pro Asp Gln Ser Gly Leu Asp Ile Asn Gly Ile Lys				
165	170	175		
ccc gaa ccc ata tgt gac tac aca cca gca tct ggc ttc ttc ccc tac	935			
Pro Glu Pro Ile Cys Asp Tyr Thr Pro Ala Ser Gly Phe Phe Pro Tyr				
180	185	190		
tgt tcc ttc acc aac gga gag act tcc cca acc gtg tcc atg gca gaa	983			
Cys Ser Phe Thr Asn Gly Glu Thr Ser Pro Thr Val Ser Met Ala Glu				
195	200	205		
cta gaa cac ctt gcc cag aac ata tcc aaa tcc cac ctg gaa acc tgc	1031			
Leu Glu His Leu Ala Gln Asn Ile Ser Lys Ser His Leu Glu Thr Cys				
210	215	220		
cag tac ttg cgg gaa gag ctc cag cag ata acg tgg cag acc ttc tgg	1079			

Gln Tyr Leu Arg Glu Glu Leu Gln Gln Ile Thr Trp Gln Thr Phe Trp	
225	230
cag gag gag att gaa aac tac cag aac aag cag aga gag gtg atg tgg	1127
Gln Glu Glu Ile Glu Asn Tyr Gln Asn Lys Gln Arg Glu Val Met Trp	
245	250
cag ctg tgt gcc atc aag att aca gaa gct atc cag tat gtg gtg gag	1175
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Phe Ala Lys Arg Ile Asp Gly Phe Met Glu Leu Cys Gln Asn Asp Gln	
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Cys Arg Ala Phe Asp Ser Gln Asn Asn Thr Val Tyr Phe Asp Gly Lys	
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Tyr Ala Ser Pro Asp Val Phe Lys Ser Leu Gly Cys Glu Asp Phe Ile	
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Ser Phe Val Phe Glu Phe Gly Lys Ser Leu Cys Ser Met His Leu Thr	
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Glu Asp Glu Ile Ala Leu Phe Ser Ala Phe Val Leu Met Ser Ala Asp	
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Pro Ser Trp Leu Gln Glu Lys Val Lys Ile Glu Lys Leu Gln Gln Lys	
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 Cys Gly Arg His Thr Glu Lys Leu Met Ala Phe Lys Ala Ile Tyr Pro
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 Asp Ile Val Arg Leu His Phe Pro Pro Leu Tyr Lys Glu Leu Phe Thr
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Tyr Ala Ser Pro Asp Val Phe Lys Ser Leu Gly Cys Glu Asp Phe Ile		
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Ser Phe Val Phe Glu Phe Gly Lys Ser Leu Cys Ser Met His Leu Thr		
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Glu Asp Glu Ile Ala Leu Phe Ser Ala Phe Val Leu Met Ser Ala Asp		
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Pro Ser Trp Leu Gln Glu Lys Val Lys Ile Glu Lys Leu Gln Gln Lys		
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Cys Gly Arg His Thr Glu Lys Leu Met Ala Phe Lys Ala Ile Tyr Pro		
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Met Asp Leu Cys

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gcc cgg cgg ctc ctg acc ctt gtg aac acc aat gtg acc ccg aaa ctg 1302

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Thr	Ser	Ser	Ser	Phe	Asp	Ser	Leu	Glu	Val	Leu	Leu	Asp	Ser	Phe	Gly		
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Ser Gly Leu Ser Pro Met Lys Asp Ser Ser Gly Cys Tyr Asp Arg His
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Cys Leu Gln Gln Met Ala Pro Phe Pro Glu Asp Pro Thr Leu Tyr Asn
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gga cgc tct tgc caa ctt gtc act gag acc tgc cca gag gga ggt gac 2022
Gly Arg Ser Cys Gln Leu Val Thr Glu Thr Cys Pro Glu Gly Gly Asp
245          250          255          260
tgt ggg gaa agc aga gag gtt ccc atg aac cag act ctc ttt gga gaa 2070
Cys Gly Glu Ser Arg Glu Val Pro Met Asn Gln Thr Leu Phe Gly Glu
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Val Leu Lys Gly Thr Phe Arg Gln Asn Asn Phe Ala Arg Gly Leu Asp
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Thr Gly Met Val Asn Phe Ser Glu Val Ser Gly Tyr Pro Val Leu Gln			
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cac tgg aag gtt cgg tct gtg atg tac cac atc aaa ctc aac caa gca			2358
His Trp Lys Val Arg Ser Val Met Tyr His Ile Lys Leu Asn Gln Ala			
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Thr Ser Arg Ala Asp Phe Val Ala Leu Leu Asp Gln Phe Gly Asn His			
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Tyr Ile Gln Glu Ala Val Tyr Gly Phe Glu Glu Ser Cys Ser Ile Trp			
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Ile Ser Lys Gly Asn Ser Pro Ser Asp Glu Ser Glu Glu Arg Glu Arg			
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<213> Mus musculus

<400> 250

Met	Asp	Leu	Cys	Ala	Arg	Arg	Leu	Leu	Thr	Leu	Val	Asn	Thr	Asn	Val
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Thr	Pro	Lys	Leu	Val	Gly	Gly	Ser	Thr	Gly	Gln	Thr	Gly	Glu	Cys	Leu
				20					25					30	
Cys	Tyr	Glu	Gly	Tyr	Met	Lys	Asp	Pro	Val	His	Lys	His	Leu	Cys	Ile
				35					40					45	
Arg	Asn	Glu	Trp	Gly	Thr	Asn	Gln	Gly	Pro	Trp	Pro	Tyr	Thr	Ile	Phe
				50					55					60	
Gln	Arg	Gly	Phe	Asp	Leu	Val	Leu	Gly	Glu	Gln	Pro	Ser	Asp	Lys	Ile
				65					70					75	
Phe	Arg	Phe	Thr	Tyr	Thr	Leu	Gly	Glu	Gly	Met	Trp	Leu	Pro	Leu	Ser
				85					90					95	
Lys	Ser	Phe	Val	Ile	Pro	Pro	Ala	Glu	Leu	Ala	Ile	Asn	Pro	Ser	Ala
				100					105					110	
Lys	Cys	Lys	Thr	Asp	Met	Thr	Val	Met	Glu	Asp	Ala	Val	Glu	Val	Arg

115	120	125
Glu Glu Leu Met Thr Ser Ser Ser Phe Asp Ser Leu Glu Val Leu Leu		
130	135	140
Asp Ser Phe Gly Pro Val Arg Asp Cys Ser Lys Asp Asn Gly Gly Cys		
145	150	155
Ser Lys Asn Phe Arg Cys Ile Ser Asp Arg Lys Leu Asp Ser Thr Gly		
165	170	175
Cys Val Cys Pro Ser Gly Leu Ser Pro Met Lys Asp Ser Ser Gly Cys		
180	185	190
Tyr Asp Arg His Ile Gly Val Asp Cys Ser Asp Gly Phe Asn Gly Gly		
195	200	205
Cys Glu Gln Leu Cys Leu Gln Gln Met Ala Pro Phe Pro Glu Asp Pro		
210	215	220
Thr Leu Tyr Asn Ile Leu Met Phe Cys Gly Cys Ile Glu Asp Tyr Lys		
225	230	235
Leu Gly Val Asp Gly Arg Ser Cys Gln Leu Val Thr Glu Thr Cys Pro		
245	250	255
Glu Gly Gly Asp Cys Gly Glu Ser Arg Glu Val Pro Met Asn Gln Thr		
260	265	270
Leu Phe Gly Glu Met Phe Phe Gly Tyr Asn Asn Gln Ser Lys Glu Val		
275	280	285
Ala Thr Gly Gln Val Leu Lys Gly Thr Phe Arg Gln Asn Asn Phe Ala		
290	295	300
Arg Gly Leu Asp Gln Gln Leu Pro Asp Gly Leu Val Val Ala Ser Val		
305	310	315
Pro Leu Glu Asn Gln Cys Leu Glu Glu Ile Ser Glu Pro Thr Pro Asp		
325	330	335
Pro Asp Phe Leu Thr Gly Met Val Asn Phe Ser Glu Val Ser Gly Tyr		
340	345	350

Pro Val Leu Gln His Trp Lys Val Arg Ser Val Met Tyr His Ile Lys
 355 360 365
 Leu Asn Gln Ala Ala Ile Ser Gln Ala Phe Ser Asn Ala Leu His Ser
 370 375 380
 Leu Asp Gly Ala Thr Ser Arg Ala Asp Phe Val Ala Leu Leu Asp Gln
 385 390 395 400
 Phe Gly Asn His Tyr Ile Gln Glu Ala Val Tyr Gly Phe Glu Glu Ser
 405 410 415
 Cys Ser Ile Trp Tyr Pro Asn Lys Gln Val Gln Arg Arg Leu Trp Leu
 420 425 430
 Glu Tyr Glu Asp Ile Ser Lys Gly Asn Ser Pro Ser Asp Glu Ser Glu
 435 440 445
 Glu Arg Glu Arg Asp Pro Lys Val Leu Thr Phe Pro Glu Tyr Ile Ala
 450 455 460
 Ser Leu Ser Asp Ser Gly Thr Lys Arg Met Ala Ala Gly Val Arg Met
 465 470 475 480
 Glu Cys Gln Ser Lys Gly Arg Cys Pro Ser Ser Cys Pro Leu Cys His
 485 490 495
 Val Thr Ser Ser Pro Glu Thr Pro Ala Glu Pro Val Leu Leu Glu Val
 500 505 510
 Thr Arg Ala Ser Pro Ile Tyr Glu Leu Val Thr Asn Asn Gln Thr Gln
 515 520 525
 Arg Leu Leu Gln Glu Ala Thr Met Ser Ser Leu Trp Cys Ser Gly Thr
 530 535 540
 Gly Asp Val Ile Glu Asp Trp Cys Arg Cys Asp Ser Thr Ala Phe Gly
 545 550 555 560
 Ala Asp Gly Leu Pro Thr Cys Ala Pro Leu Pro Gln Pro Val Leu Arg
 565 570 575
 Leu Ser Thr Val His Glu Pro Ser Ser Asn Leu Val Val Leu Glu Trp

580	585	590
Glu His Ser Glu Pro Pro Ile Gly Val Gln Ile Val Asp Tyr Leu Tyr		
595	600	605
Arg Gln Glu Lys Val Thr Asp Arg Met Asp His Ser Lys Val Glu Thr		
610	615	620
Glu Thr Val Leu Ser Phe Val Asp Asp Ile Ile Ser Gly Ala Lys Ala		
625	630	635
Pro Cys Ala Met Pro Ser Gln Val Pro Asp Lys Gln Leu Thr Thr Ile		
645	650	655
Ser Leu Ile Ile Arg Cys Leu Glu Pro Asp Thr Ile Tyr Met Phe Thr		
660	665	670
Leu Trp Gly Val Asp Asn Thr Gly Arg Arg Ser Arg Pro Ser Asp Val		
675	680	685
Ile Val Lys Thr Pro Cys Pro Val Val Asp Asp Val Lys Ala Gln Glu		
690	695	700
Ile Ala Asp Lys Ile Tyr Asn Leu Phe Asn Gly Tyr Thr Ser Gly Lys		
705	710	715
Glu Gln Gln Thr Ala Tyr Asn Thr Leu Leu Asp Leu Gly Ser Pro Thr		
725	730	735
Leu His Arg Val Leu Tyr His Tyr Asn Gln His Tyr Glu Ser Phe Gly		
740	745	750
Glu Phe Trp Arg Cys Glu Asp Glu Leu Gly Pro Arg Lys Ala Gly Leu		
755	760	765
Ile Leu Ser Gln Leu Gly Asp Leu Ser Ser Trp Cys Asn Gly Leu Leu		
770	775	780
Gln Glu Pro Lys Ile Ser Leu Arg Arg Gly Ser Leu Lys Tyr Leu Ala		
785	790	795
Gly Arg Tyr Ser Glu Ile Lys Pro Tyr Gly Leu Asp Trp Ser Glu Leu		
805	810	815

Ser Arg Asp Leu Arg Lys Thr Cys Glu Glu Gln Thr Leu Ser Val Pro

820

825

830

Tyr Asn Asp Tyr Gly Asp Ser Lys Asp Ile

835

840

<210> 251

<211> 516

<212> DNA

<213> Mus musculus

<400> 251

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gaagccgctg ctctccaagt tctaccagcc ctatagttaa gacacgcaac agcaaatacat 180
caggagagact ticcatttgg tgtctaaagg cgatgagaac gtttgtaatt tcctagaagg 240
aggattattia attggaggct ctgacaacaa gctcatttac agacattatg caacactata 300
ttttgtcttc tgtgtggact cctcagaaaag tgaacttggc attttagatc taattcaagt 360
atttgttgaa acattagaca aatgttttga aaatgtttgt gaactggatt taatattcca 420
tgtagacaag gatcataata ttcttgcaga aatggtgatg gggggaatgg tattggagac 480
caacatgaat gagatttgca cacaatttga tgcaca 516

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<210> 252

<211> 2300

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (607).. (1926)

<400> 252

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 cgggaaaaag aaggagggg agggatcctg agtcgcagta taaaagaagc ttttcgggcg 180
 tttttttctg actcgtgta gtaattccag cgagagacag agggagttag cggacggttg 240
 gaagagccgt gtgtgcagag ccgcgctccg gggcgacctt agaaggcagc tctggagtga 300
 gaggggcttt gcctccgagc ctgccgcccc ctctcccca ccttcgcact gacccaacat 360
 cagcggccgc aaccctcgcc gccgctggga aactttgccc attgcagcgg gcagacactt 420
 ctacttgaa cttacaatct gcgagccagg acaggactcc ccaggctccg gggagggaat 480
 tttgtctat ttggggacag tgttctctgc ctctgccgc gatcagctct cctgaaaaga 540
 gctcctcgag ctgtttgaag gctggatttc ctttgggcgt tggaaacccc gcagacagcc 600
 acgacg atg ccc ctc aac gtg aac ttc acc aac agg aac tat gac ctc 648

Met Pro Leu Asn Val Asn Phe Thr Asn Arg Asn Tyr Asp Leu

1

5

10

gac tac gac tcc gta cag ccc tat ttc atc tgc gac gag gaa gag aat 696

Asp Tyr Asp Ser Val Gln Pro Tyr Phe Ile Cys Asp Glu Glu Glu Asn

15

20

25

30

ttc tat cac cag caa cag cag agc gag ctg cag ccg ccc gcg ccc agt 744

Phe Tyr His Gln Gln Gln Gln Ser Glu Leu Gln Pro Pro Ala Pro Ser

35

40

45

gag gat atc tgg aag aaa ttc gag ctg ctt ccc acc ccg ccc ctg tcc 792

Glu Asp Ile Trp Lys Lys Phe Glu Leu Leu Pro Thr Pro Pro Leu Ser

50

55

60

ccg agc cgc cgc tcc ggg ctc tgc tct cca tcc tat gtt gcg gtc gct 840

Pro Ser Arg Arg Ser Gly Leu Cys Ser Pro Ser Tyr Val Ala Val Ala

65

70

75

acg tcc ttc tcc cca agg gaa gac gat gac ggc ggc ggt ggc aac ttc 888

Thr Ser Phe Ser Pro Arg Glu Asp Asp Asp Gly Gly Gly Gly Asn Phe

80	85	90	
tcc acc gcc gat cag ctg gag atg atg acc gag tta ctt gga gga gac	936		
Ser Thr Ala Asp Gln Leu Glu Met Met Thr Glu Leu Leu Gly Gly Asp			
95	100	105	110
atg gtg aac cag agc ttc atc tgc gat cct gac gac gag acc ttc atc	984		
Met Val Asn Gln Ser Phe Ile Cys Asp Pro Asp Asp Glu Thr Phe Ile			
	115	120	125
aag aac atc atc atc cag gac tgt atg tgg agc ggt ttc tca gcc gct	1032		
Lys Asn Ile Ile Ile Gln Asp Cys Met Trp Ser Gly Phe Ser Ala Ala			
	130	135	140
gcc aag ctg gtc tgc gag aag ctg gcc tcc tac cag gct gcg cgc aaa	1080		
Ala Lys Leu Val Ser Glu Lys Leu Ala Ser Tyr Gln Ala Ala Arg Lys			
	145	150	155
gac agc acc agc ctg agc ccc gcc cgc ggg cac agc gtc tgc tcc acc	1128		
Asp Ser Thr Ser Leu Ser Pro Ala Arg Gly His Ser Val Cys Ser Thr			
	160	165	170
tcc agc ctg tac ctg cag gac ctc acc gcc gcc gcg tcc gag tgc att	1176		
Ser Ser Leu Tyr Leu Gln Asp Leu Thr Ala Ala Ala Ser Glu Cys Ile			
	175	180	185
gac ccc tca gtg gtc ttt ccc tac ccg ctc aac gac agc agc tgc ccc	1224		
Asp Pro Ser Val Val Phe Pro Tyr Pro Leu Asn Asp Ser Ser Ser Pro			
	195	200	205
aaa tcc tgt acc tgc tcc gat tcc acg gcc ttc tct cct tcc tgc gac	1272		
Lys Ser Cys Thr Ser Ser Asp Ser Thr Ala Phe Ser Pro Ser Ser Asp			
	210	215	220
tgc ctg ctg tcc tcc gag tcc tcc cca cgg gcc agc cct gag ccc cta	1320		
Ser Leu Leu Ser Ser Glu Ser Ser Pro Arg Ala Ser Pro Glu Pro Leu			
	225	230	235
gtg ctg cat gag gag aca ccg ccc acc acc agc agc gac tct gaa gaa	1368		

Val	Leu	His	Glu	Glu	Thr	Pro	Pro	Thr	Thr	Ser	Ser	Asp	Ser	Glu	Glu		
240						245						250					
gag caa gaa gat gag gaa gaa att gat gtg gtg tct gtg gag aag agg																1416	
Glu	Gln	Glu	Asp	Glu	Glu	Glu	Ile	Asp	Val	Val	Ser	Val	Glu	Lys	Arg		
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caa acc cct gcc aag agg tcg gag tcg ggc tca tct cca tcc cga ggc																1464	
Gln	Thr	Pro	Ala	Lys	Arg	Ser	Glu	Ser	Gly	Ser	Ser	Pro	Ser	Arg	Gly		
						275						280			285		
cac agc aaa cct ccg cac agc cca ctg gtc ctc aag agg tgc cac gtc																1512	
His	Ser	Lys	Pro	Pro	His	Ser	Pro	Leu	Val	Leu	Lys	Arg	Cys	His	Val		
						290						295			300		
tcc act cac cag cac aac tac gcc gca ccc ccc tcc aca agg aag gac																1560	
Ser	Thr	His	Gln	His	Asn	Tyr	Ala	Ala	Pro	Pro	Ser	Thr	Arg	Lys	Asp		
						305						310			315		
tat cca gct gcc aag agg gcc aag ttg gac agt ggc agg gtc ctg aag																1608	
Tyr	Pro	Ala	Ala	Lys	Arg	Ala	Lys	Leu	Asp	Ser	Gly	Arg	Val	Leu	Lys		
						320						325			330		
cag atc agc aac aac cgc aag tgc tcc agc ccc agg tcc tca gac acg																1656	
Gln	Ile	Ser	Asn	Asn	Arg	Lys	Cys	Ser	Ser	Pro	Arg	Ser	Ser	Asp	Thr		
						335						340			345		350
gag gaa aac gac aag agg cgg aca cac aac gtc ttg gaa cgt cag agg																1704	
Glu	Glu	Asn	Asp	Lys	Arg	Arg	Thr	His	Asn	Val	Leu	Glu	Arg	Gln	Arg		
						355						360			365		
agg aac gag ctg aag cgc agc ttt ttt gcc ctg cgt gac cag atc cct																1752	
Arg	Asn	Glu	Leu	Lys	Arg	Ser	Phe	Phe	Ala	Leu	Arg	Asp	Gln	Ile	Pro		
						370						375			380		
gaa ttg gaa aac aac gaa aag gcc ccc aag gta gtg atc ctc aaa aaa																1800	
Glu	Leu	Glu	Asn	Asn	Glu	Lys	Ala	Pro	Lys	Val	Val	Ile	Leu	Lys	Lys		
						385						390			395		

gcc acc gcc tac atc ctg tcc att caa gca gac gag cac aag ctc acc 1848
 Ala Thr Ala Tyr Ile Leu Ser Ile Gln Ala Asp Glu His Lys Leu Thr
 400 405 410
 tct gaa aag gac tta ttg agg aaa cga cga gaa cag ttg aaa cac aaa 1896
 Ser Glu Lys Asp Leu Leu Arg Lys Arg Arg Glu Gln Leu Lys His Lys
 415 420 425 430
 ctc gaa cag ctt cga aac tct ggt gca taa actgacctaa ctcgaggagg 1946
 Leu Glu Gln Leu Arg Asn Ser Gly Ala
 435 440
 agctggaatc tctcgtgaga gtaaggagaa cggttccttc tgacagaact gatgcgctgg 2006
 aattaaaaatg catgctcaaa gcctaaccctc acaaccttgg ctggggcctt gggactgtaa 2066
 gcttcagcca taattttaac tgcctcaaac ttaaataagta taaaagaact ttttttatgc 2126
 ttcccatctt ttttcttttt ccttttaaca gatttgtatt taattgtttt tttaaaaaaa 2186
 tcttaaaatc tatccaattt tcccatgtaa atagggcctt gaaatgtaaa taactttaat 2246
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<210> 253

<211> 439

<212> PRT

<213> Mus musculus

<400> 253

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 His Gln Gln Gln Gln Ser Glu Leu Gln Pro Pro Ala Pro Ser Glu Asp
 35 40 45
 Ile Trp Lys Lys Phe Glu Leu Leu Pro Thr Pro Pro Leu Ser Pro Ser

50	55	60
Arg Arg Ser Gly Leu Cys Ser Pro Ser Tyr Val Ala Val Ala Thr Ser		
65	70	75
Phe Ser Pro Arg Glu Asp Asp Asp Gly Gly Gly Gly Asn Phe Ser Thr		80
85	90	95
Ala Asp Gln Leu Glu Met Met Thr Glu Leu Leu Gly Gly Asp Met Val		
100	105	110
Asn Gln Ser Phe Ile Cys Asp Pro Asp Asp Glu Thr Phe Ile Lys Asn		
115	120	125
Ile Ile Ile Gln Asp Cys Met Trp Ser Gly Phe Ser Ala Ala Ala Lys		
130	135	140
Leu Val Ser Glu Lys Leu Ala Ser Tyr Gln Ala Ala Arg Lys Asp Ser		
145	150	155
Thr Ser Leu Ser Pro Ala Arg Gly His Ser Val Cys Ser Thr Ser Ser		160
165	170	175
Leu Tyr Leu Gln Asp Leu Thr Ala Ala Ala Ser Glu Cys Ile Asp Pro		
180	185	190
Ser Val Val Phe Pro Tyr Pro Leu Asn Asp Ser Ser Ser Pro Lys Ser		
195	200	205
Cys Thr Ser Ser Asp Ser Thr Ala Phe Ser Pro Ser Ser Asp Ser Leu		
210	215	220
Leu Ser Ser Glu Ser Ser Pro Arg Ala Ser Pro Glu Pro Leu Val Leu		
225	230	235
His Glu Glu Thr Pro Pro Thr Thr Ser Ser Asp Ser Glu Glu Glu Gln		
245	250	255
Glu Asp Glu Glu Glu Ile Asp Val Val Ser Val Glu Lys Arg Gln Thr		
260	265	270
Pro Ala Lys Arg Ser Glu Ser Gly Ser Ser Pro Ser Arg Gly His Ser		
275	280	285

Lys Pro Pro His Ser Pro Leu Val Leu Lys Arg Cys His Val Ser Thr
 290 295 300
 His Gln His Asn Tyr Ala Ala Pro Pro Ser Thr Arg Lys Asp Tyr Pro
 305 310 315 320
 Ala Ala Lys Arg Ala Lys Leu Asp Ser Gly Arg Val Leu Lys Gln Ile
 325 330 335
 Ser Asn Asn Arg Lys Cys Ser Ser Pro Arg Ser Ser Asp Thr Glu Glu
 340 345 350
 Asn Asp Lys Arg Arg Thr His Asn Val Leu Glu Arg Gln Arg Arg Asn
 355 360 365
 Glu Leu Lys Arg Ser Phe Phe Ala Leu Arg Asp Gln Ile Pro Glu Leu
 370 375 380
 Glu Asn Asn Glu Lys Ala Pro Lys Val Val Ile Leu Lys Lys Ala Thr
 385 390 395 400
 Ala Tyr Ile Leu Ser Ile Gln Ala Asp Glu His Lys Leu Thr Ser Glu
 405 410 415
 Lys Asp Leu Leu Arg Lys Arg Arg Glu Gln Leu Lys His Lys Leu Glu
 420 425 430
 Gln Leu Arg Asn Ser Gly Ala
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<210> 254

<211> 3586

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (80).. (2080)

<400> 254

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      Met Ala Cys Leu Met Ala Ala Phe Ser Val Gly
              1              5              10
acc gcc atg aat gcc agc agc tac tct gcc gca atg acg gag ccc aag 160
Thr Ala Met Asn Ala Ser Ser Tyr Ser Ala Ala Met Thr Glu Pro Lys
              15              20              25
tcc gtg tgc gtg tca gtg gac gag gtc gtg tcc agc aac gtg gat gag 208
Ser Val Cys Val Ser Val Asp Glu Val Val Ser Ser Asn Val Asp Glu
              30              35              40
gtt gag aca gac ctg ctc aat ggg cac ctg aag aag gtg gac aac aac 256
Val Glu Thr Asp Leu Leu Asn Gly His Leu Lys Lys Val Asp Asn Asn
              45              50              55
ttc aca gag gcc cag cgc ttt tcc tcc ctt ccg cgg agg gcg gcc gtg 304
Phe Thr Glu Ala Gln Arg Phe Ser Ser Leu Pro Arg Arg Ala Ala Val
              60              65              70              75
aac atc gaa ttc aag gac ctt tcc tac tct gta ccc gag ggg ccc tgg 352
Asn Ile Glu Phe Lys Asp Leu Ser Tyr Ser Val Pro Glu Gly Pro Trp
              80              85              90
tgg aag aag aaa gga tac aag acc ctt ttg aaa ggg atc tct ggg aaa 400
Trp Lys Lys Lys Gly Tyr Lys Thr Leu Leu Lys Gly Ile Ser Gly Lys
              95              100              105
ttc aac agt gga gag ctg gtg gcc atc atg ggt cct tct gga gct ggg 448
Phe Asn Ser Gly Glu Leu Val Ala Ile Met Gly Pro Ser Gly Ala Gly
              110              115              120
aag tcc aca ctg atg aat att ctg gca gga tac agg gag act ggc atg 496
Lys Ser Thr Leu Met Asn Ile Leu Ala Gly Tyr Arg Glu Thr Gly Met

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125	130	135	
aaa ggg gca gtc ctt atc aat gga atg ccc cgg gac ctg cgc tgc ttc			544
Lys Gly Ala Val Leu Ile Asn Gly Met Pro Arg Asp Leu Arg Cys Phe			
140	145	150	155
cgg aag gtc tcc tgc tac atc atg cag gac gac atg ctg ctg cct cac			592
Arg Lys Val Ser Cys Tyr Ile Met Gln Asp Asp Met Leu Leu Pro His			
160	165	170	
ctc act gtt cag gag gcc atg atg gtg tcc gcg cat ctg aag ctg cag			640
Leu Thr Val Gln Glu Ala Met Met Val Ser Ala His Leu Lys Leu Gln			
175	180	185	
gag aag gat gaa ggc aga cgg gag atg gtc aaa gag atc ctg aca gcc			688
Glu Lys Asp Glu Gly Arg Arg Glu Met Val Lys Glu Ile Leu Thr Ala			
190	195	200	
ctg ggc ttg ctg ccc tgt gcc aac aca cgc acg ggg agc ctc tca ggc			736
Leu Gly Leu Leu Pro Cys Ala Asn Thr Arg Thr Gly Ser Leu Ser Gly			
205	210	215	
ggc cag cgg aaa cgc ctg gcc att gcc ctg gag ctg gtc aac aac ccg			784
Gly Gln Arg Lys Arg Leu Ala Ile Ala Leu Glu Leu Val Asn Asn Pro			
220	225	230	235
cct gtc atg ttc ttt gat gag ccc acc agt ggc ctg gac agc gcc tcc			832
Pro Val Met Phe Phe Asp Glu Pro Thr Ser Gly Leu Asp Ser Ala Ser			
240	245	250	
tgc ttc caa gtg gtg tct ctg atg aaa gga ctg gcc cag ggt ggc cgc			880
Cys Phe Gln Val Val Ser Leu Met Lys Gly Leu Ala Gln Gly Gly Arg			
255	260	265	
tcc atc gtc tgt acc atc cac cag ccc agt gcc aag ctc ttt gag ctc			928
Ser Ile Val Cys Thr Ile His Gln Pro Ser Ala Lys Leu Phe Glu Leu			
270	275	280	
ttt gac cag ctt tat gtc cta agt caa gga caa tgc gta tac agg gga			976

Phe	Asp	Gln	Leu	Tyr	Val	Leu	Ser	Gln	Gly	Gln	Cys	Val	Tyr	Arg	Gly		
285						290					295						
aag	gtc	tcc	aat	ctc	gtg	ccg	tat	ctg	agg	gat	ctg	ggt	ctg	aac	tgc	1024	
Lys	Val	Ser	Asn	Leu	Val	Pro	Tyr	Leu	Arg	Asp	Leu	Gly	Leu	Asn	Cys		
300					305					310				315			
cct	acc	tac	cac	aac	cca	gca	gac	ttt	gtc	atg	gaa	gtg	gca	tca	ggg	1072	
Pro	Thr	Tyr	His	Asn	Pro	Ala	Asp	Phe	Val	Met	Glu	Val	Ala	Ser	Gly		
				320					325				330				
gag	tac	ggg	gat	cag	aac	agt	cgc	ctg	gtg	aga	gcc	gtg	cga	gag	ggc	1120	
Glu	Tyr	Gly	Asp	Gln	Asn	Ser	Arg	Leu	Val	Arg	Ala	Val	Arg	Glu	Gly		
		335						340				345					
atg	tgt	gac	gct	gac	tat	aag	aga	gac	ctc	ggg	ggc	gac	acc	gat	gtg	1168	
Met	Cys	Asp	Ala	Asp	Tyr	Lys	Arg	Asp	Leu	Gly	Gly	Asp	Thr	Asp	Val		
	350					355				360							
aac	ccg	ttt	ctt	tgg	cac	cgg	cct	gct	gaa	gag	gac	tcc	gcc	tcc	atg	1216	
Asn	Pro	Phe	Leu	Trp	His	Arg	Pro	Ala	Glu	Glu	Asp	Ser	Ala	Ser	Met		
	365					370				375							
gaa	ggt	tgc	cat	agc	ttc	tcg	gcc	agc	tgc	ctc	acc	cag	ttc	tgc	atc	1264	
Glu	Gly	Cys	His	Ser	Phe	Ser	Ala	Ser	Cys	Leu	Thr	Gln	Phe	Cys	Ile		
380					385					390				395			
ctc	ttc	aag	agg	acc	ttc	ctc	agc	atc	atg	cgg	gac	tcg	gtc	ctg	aca	1312	
Leu	Phe	Lys	Arg	Thr	Phe	Leu	Ser	Ile	Met	Arg	Asp	Ser	Val	Leu	Thr		
				400					405				410				
cat	ctg	cga	atc	acc	tcg	cac	att	ggg	atc	ggc	ctg	ctc	att	ggc	ctg	1360	
His	Leu	Arg	Ile	Thr	Ser	His	Ile	Gly	Ile	Gly	Leu	Leu	Ile	Gly	Leu		
		415						420				425					
ctg	tac	ctg	ggg	att	ggg	aat	gaa	gcc	aag	aag	gtc	ctt	agc	aac	tcc	1408	
Leu	Tyr	Leu	Gly	Ile	Gly	Asn	Glu	Ala	Lys	Lys	Val	Leu	Ser	Asn	Ser		
	430							435				440					

ggc ttc ctg ttc ttc tcc atg ctg ttc ctc atg ttt gct gcc ctc atg 1456
 Gly Phe Leu Phe Phe Ser Met Leu Phe Leu Met Phe Ala Ala Leu Met
 445 450 455
 ccc act gtt ctg acc ttt ccc ctg gag atg agt gtc ttc ctc cgg gag 1504
 Pro Thr Val Leu Thr Phe Pro Leu Glu Met Ser Val Phe Leu Arg Glu
 460 465 470 475
 cac ctg aac tac tgg tac agc ctg aag gcc tac tac ctg gca aag acc 1552
 His Leu Asn Tyr Trp Tyr Ser Leu Lys Ala Tyr Tyr Leu Ala Lys Thr
 480 485 490
 atg gcc gat gtc ccc ttt cag atc atg ttc cct gtg gcc tac tgc agt 1600
 Met Ala Asp Val Pro Phe Gln Ile Met Phe Pro Val Ala Tyr Cys Ser
 495 500 505
 atc gta tac tgg atg acg tcc cag ccg tcg gac gct gtg cgt ttt gtg 1648
 Ile Val Tyr Trp Met Thr Ser Gln Pro Ser Asp Ala Val Arg Phe Val
 510 515 520
 ctg ttc gct gct ctg ggt acc atg aca tcg ctg gtg gcc cag tcc tta 1696
 Leu Phe Ala Ala Leu Gly Thr Met Thr Ser Leu Val Ala Gln Ser Leu
 525 530 535
 gga cta ctg att gga gct gca tcc aca tcc ctg cag gtt gcg aca ttt 1744
 Gly Leu Leu Ile Gly Ala Ala Ser Thr Ser Leu Gln Val Ala Thr Phe
 540 545 550 555
 gtg ggt ccc gtg aca gcc atc ccc gtc ctg ctc ttc tcc gga ttc ttt 1792
 Val Gly Pro Val Thr Ala Ile Pro Val Leu Leu Phe Ser Gly Phe Phe
 560 565 570
 gtc agc ttt gac acc atc cca gcc tac ctg cag tgg atg tcc tac atc 1840
 Val Ser Phe Asp Thr Ile Pro Ala Tyr Leu Gln Trp Met Ser Tyr Ile
 575 580 585
 tcc tat gtc aga tac ggc ttt gag ggg gtc atc ctg tcc atc tac ggc 1888
 Ser Tyr Val Arg Tyr Gly Phe Glu Gly Val Ile Leu Ser Ile Tyr Gly

590	595	600	
ttg gac cga gaa gac ctg cac tgc gac atc gcg gag aca tgc cac ttc			1936
Leu Asp Arg Glu Asp Leu His Cys Asp Ile Ala Glu Thr Cys His Phe			
605	610	615	
cag aag tca gag gcc atc ctg agg gag ctg gac gtg gag aat gcg aag			1984
Gln Lys Ser Glu Ala Ile Leu Arg Glu Leu Asp Val Glu Asn Ala Lys			
620	625	630	635
ctg tac ctg gat ttc atc gtc ctg ggc atc ttc ttc atc tcc ctg cgg			2032
Leu Tyr Leu Asp Phe Ile Val Leu Gly Ile Phe Phe Ile Ser Leu Arg			
640	645	650	
ctc atc gcc tat ttc gtc ctc aga tac aaa atc cgg gct gag agg taa			2080
Leu Ile Ala Tyr Phe Val Leu Arg Tyr Lys Ile Arg Ala Glu Arg			
655	660	665	
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tcgatccacc ttgtgatgtt taaagacca tttccctttt cttcatgaat cacattaact			2980
acctccaccg agcctgggaa gccggccttg ggacatatcg ggtgtatccc tccaacttga			3040

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 atgtccccgt taagaaaatg cagctgctcg cctcttccag agcaccacca tctaaggica 3160
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 accgatgga taatgtgctt tggaactctt tagagattct ttttattttt tacactccta 3400
 gatctttttt atagagaaca cacaatlgaa atgcatatta tgatgtaatt ttcggtttgc 3460
 ttgttctata caaacacggc ctgtccttct agactcagct ttttaaccagg gacacgattc 3520
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 aaaaaa 3586

<210> 255

<211> 666

<212> PRT

<213> Mus musculus

<400> 255

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				20						25				30	
Val	Asp	Glu	Val	Val	Ser	Ser	Asn	Val	Asp	Glu	Val	Glu	Thr	Asp	Leu
				35				40						45	
Leu	Asn	Gly	His	Leu	Lys	Lys	Val	Asp	Asn	Asn	Phe	Thr	Glu	Ala	Gln
				50				55						60	
Arg	Phe	Ser	Ser	Leu	Pro	Arg	Arg	Ala	Ala	Val	Asn	Ile	Glu	Phe	Lys
				65				70						75	
Asp	Leu	Ser	Tyr	Ser	Val	Pro	Glu	Gly	Pro	Trp	Trp	Lys	Lys	Lys	Gly
				85						90				95	

Tyr Lys Thr Leu Leu Lys Gly Ile Ser Gly Lys Phe Asn Ser Gly Glu
 100 105 110
 Leu Val Ala Ile Met Gly Pro Ser Gly Ala Gly Lys Ser Thr Leu Met
 115 120 125
 Asn Ile Leu Ala Gly Tyr Arg Glu Thr Gly Met Lys Gly Ala Val Leu
 130 135 140
 Ile Asn Gly Met Pro Arg Asp Leu Arg Cys Phe Arg Lys Val Ser Cys
 145 150 155 160
 Tyr Ile Met Gln Asp Asp Met Leu Leu Pro His Leu Thr Val Gln Glu
 165 170 175
 Ala Met Met Val Ser Ala His Leu Lys Leu Gln Glu Lys Asp Glu Gly
 180 185 190
 Arg Arg Glu Met Val Lys Glu Ile Leu Thr Ala Leu Gly Leu Leu Pro
 195 200 205
 Cys Ala Asn Thr Arg Thr Gly Ser Leu Ser Gly Gly Gln Arg Lys Arg
 210 215 220
 Leu Ala Ile Ala Leu Glu Leu Val Asn Asn Pro Pro Val Met Phe Phe
 225 230 235 240
 Asp Glu Pro Thr Ser Gly Leu Asp Ser Ala Ser Cys Phe Gln Val Val
 245 250 255
 Ser Leu Met Lys Gly Leu Ala Gln Gly Gly Arg Ser Ile Val Cys Thr
 260 265 270
 Ile His Gln Pro Ser Ala Lys Leu Phe Glu Leu Phe Asp Gln Leu Tyr
 275 280 285
 Val Leu Ser Gln Gly Gln Cys Val Tyr Arg Gly Lys Val Ser Asn Leu
 290 295 300
 Val Pro Tyr Leu Arg Asp Leu Gly Leu Asn Cys Pro Thr Tyr His Asn
 305 310 315 320
 Pro Ala Asp Phe Val Met Glu Val Ala Ser Gly Glu Tyr Gly Asp Gln

325	330	335
Asn Ser Arg Leu Val Arg Ala Val Arg Glu Gly Met Cys Asp Ala Asp		
340	345	350
Tyr Lys Arg Asp Leu Gly Gly Asp Thr Asp Val Asn Pro Phe Leu Trp		
355	360	365
His Arg Pro Ala Glu Glu Asp Ser Ala Ser Met Glu Gly Cys His Ser		
370	375	380
Phe Ser Ala Ser Cys Leu Thr Gln Phe Cys Ile Leu Phe Lys Arg Thr		
385	390	395
Phe Leu Ser Ile Met Arg Asp Ser Val Leu Thr His Leu Arg Ile Thr		
405	410	415
Ser His Ile Gly Ile Gly Leu Leu Ile Gly Leu Leu Tyr Leu Gly Ile		
420	425	430
Gly Asn Glu Ala Lys Lys Val Leu Ser Asn Ser Gly Phe Leu Phe Phe		
435	440	445
Ser Met Leu Phe Leu Met Phe Ala Ala Leu Met Pro Thr Val Leu Thr		
450	455	460
Phe Pro Leu Glu Met Ser Val Phe Leu Arg Glu His Leu Asn Tyr Trp		
465	470	475
Tyr Ser Leu Lys Ala Tyr Tyr Leu Ala Lys Thr Met Ala Asp Val Pro		
485	490	495
Phe Gln Ile Met Phe Pro Val Ala Tyr Cys Ser Ile Val Tyr Trp Met		
500	505	510
Thr Ser Gln Pro Ser Asp Ala Val Arg Phe Val Leu Phe Ala Ala Leu		
515	520	525
Gly Thr Met Thr Ser Leu Val Ala Gln Ser Leu Gly Leu Leu Ile Gly		
530	535	540
Ala Ala Ser Thr Ser Leu Gln Val Ala Thr Phe Val Gly Pro Val Thr		
545	550	555
		560

Ala Ile Pro Val Leu Leu Phe Ser Gly Phe Phe Val Ser Phe Asp Thr

565

570

575

Ile Pro Ala Tyr Leu Gln Trp Met Ser Tyr Ile Ser Tyr Val Arg Tyr

580

585

590

Gly Phe Glu Gly Val Ile Leu Ser Ile Tyr Gly Leu Asp Arg Glu Asp

595

600

605

Leu His Cys Asp Ile Ala Glu Thr Cys His Phe Gln Lys Ser Glu Ala

610

615

620

Ile Leu Arg Glu Leu Asp Val Glu Asn Ala Lys Leu Tyr Leu Asp Phe

625

630

635

640

Ile Val Leu Gly Ile Phe Phe Ile Ser Leu Arg Leu Ile Ala Tyr Phe

645

650

655

Val Leu Arg Tyr Lys Ile Arg Ala Glu Arg

660

665

<210> 256

<211> 2755

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (58).. (1242)

<400> 256

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atg gag tca tcc atc aat cac atc tca cag act gtg gat att cat aaa 105

Met Glu Ser Ser Ile Asn His Ile Ser Gln Thr Val Asp Ile His Lys

1

5

10

15

gaa aaa gtg gct cga aga gag att ggt att ttg aca aca aat aag aat 153
 Glu Lys Val Ala Arg Arg Glu Ile Gly Ile Leu Thr Thr Asn Lys Asn
 20 25 30
 aca tca aga act cac aaa ata atc gca ccc gca aat atg gag cgt cct 201
 Thr Ser Arg Thr His Lys Ile Ile Ala Pro Ala Asn Met Glu Arg Pro
 35 40 45
 gtc agg tat att cgg aaa cct atc gac tat aca gtt ctg gat gat gtg 249
 Val Arg Tyr Ile Arg Lys Pro Ile Asp Tyr Thr Val Leu Asp Asp Val
 50 55 60
 ggc cat gga gtt aag cac gga aat aac cag cct gca aga act ggc aca 297
 Gly His Gly Val Lys His Gly Asn Asn Gln Pro Ala Arg Thr Gly Thr
 65 70 75 80
 ttg tcg aga aca aac cct ccc acg cag aaa cca cca agc cct ccc gtg 345
 Leu Ser Arg Thr Asn Pro Pro Thr Gln Lys Pro Pro Ser Pro Pro Val
 85 90 95
 tcg ggc cga ggg act ttg gga cgg aat acc cct tac aaa acc cta gag 393
 Ser Gly Arg Gly Thr Leu Gly Arg Asn Thr Pro Tyr Lys Thr Leu Glu
 100 105 110
 cct gtt aag cct cca aca gtt ccc aat gac tac atg act agt cct gcg 441
 Pro Val Lys Pro Pro Thr Val Pro Asn Asp Tyr Met Thr Ser Pro Ala
 115 120 125
 agg ctt gga agc cag cat agt cca ggc agg aca gct tct tta atc aga 489
 Arg Leu Gly Ser Gln His Ser Pro Gly Arg Thr Ala Ser Leu Ile Arg
 130 135 140
 gac caa gga cgc att agt gga agt agt gga gga agc gga agc cga gag 537
 Asp Gln Gly Arg Ile Ser Gly Ser Ser Gly Gly Ser Gly Ser Arg Glu
 145 150 155 160
 aac agt ggg agc agc agc att ggc att cct att gct gtg cct acg ccc 585
 Asn Ser Gly Ser Ser Ser Ile Gly Ile Pro Ile Ala Val Pro Thr Pro

165	170	175	
tca ccg ccc act gcg ggc cca gcc cct ggc gca gct cct ggt tcc cag	633		
Ser Pro Pro Thr Ala Gly Pro Ala Pro Gly Ala Ala Pro Gly Ser Gln			
180	185	190	
tat ggc aca atg acc agg cag att tct cga cac aac tct acc act tct	681		
Tyr Gly Thr Met Thr Arg Gln Ile Ser Arg His Asn Ser Thr Thr Ser			
195	200	205	
tcg aca tct tct ggt gga tat aga cga act cct tct gtg gcc gcc caa	729		
Ser Thr Ser Ser Gly Gly Tyr Arg Arg Thr Pro Ser Val Ala Ala Gln			
210	215	220	
ttc tct gct cag cct cat gtt aat gga ggt cca ctt tta ttc tca aaa	777		
Phe Ser Ala Gln Pro His Val Asn Gly Gly Pro Leu Leu Phe Ser Lys			
225	230	235	240
ttc aat ttc ttg ttg gcc ctc ctc ctc ccc cca tgg cct cag ttg act	825		
Phe Asn Phe Leu Leu Ala Leu Leu Leu Pro Pro Trp Pro Gln Leu Thr			
245	250	255	
cca cag atc cct ctc aca ggg ttc ggg ggc agg gtg caa gga aac att	873		
Pro Gln Ile Pro Leu Thr Gly Phe Gly Gly Arg Val Gln Gly Asn Ile			
260	265	270	
gct gat agg ggg caa act cca cca cca ccc cct cca cca gat gac att	921		
Ala Asp Arg Gly Gln Thr Pro Pro Pro Pro Pro Pro Pro Asp Asp Ile			
275	280	285	
ccc atg ttt gat gac tct ccg cct cct ccg cca cct cct cct gtg gac	969		
Pro Met Phe Asp Asp Ser Pro Pro Pro Pro Pro Pro Pro Val Asp			
290	295	300	
tat gaa gat gag gaa gct gca gta gtt cag tat agt gac cca tat gca	1017		
Tyr Glu Asp Glu Glu Ala Ala Val Val Gln Tyr Ser Asp Pro Tyr Ala			
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gat ggg gac cct gca tgg gct tcc cca aga act ata ttg aga aag ttg	1065		

Asp Gly Asp Pro Ala Trp Ala Ser Pro Arg Thr Ile Leu Arg Lys Leu
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 tlg caa tat atg att ata tac caa aag aca agg atg atg agc tgt cct 1113
 Leu Gln Tyr Met Ile Ile Tyr Gln Lys Thr Arg Met Met Ser Cys Pro
 340 345 350
 tta aaa gag ggt gca atc atc tat gtt ata aag aag aat gat gat ggc 1161
 Leu Lys Glu Gly Ala Ile Ile Tyr Val Ile Lys Lys Asn Asp Asp Gly
 355 360 365
 tgg ttt gaa gga gtt tgc aat cga gtg act gga ctc ttc cct ggg aac 1209
 Trp Phe Glu Gly Val Cys Asn Arg Val Thr Gly Leu Phe Pro Gly Asn
 370 375 380
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 Tyr Val Glu Ser Ile Met His Tyr Thr Asp
 385 390 395
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 aatgtgtcca aacagtcaat gtgacagaat ttgacagatt ttggagctag actgtgtcag 2102
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<210> 257

<211> 394

<212> PRT

<213> Mus musculus

<400> 257

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Glu	Lys	Val	Ala	Arg	Arg	Glu	Ile	Gly	Ile	Leu	Thr	Thr	Asn	Lys	Asn
				20				25					30		
Thr	Ser	Arg	Thr	His	Lys	Ile	Ile	Ala	Pro	Ala	Asn	Met	Glu	Arg	Pro
				35				40					45		
Val	Arg	Tyr	Ile	Arg	Lys	Pro	Ile	Asp	Tyr	Thr	Val	Leu	Asp	Asp	Val
				50				55					60		
Gly	His	Gly	Val	Lys	His	Gly	Asn	Asn	Gln	Pro	Ala	Arg	Thr	Gly	Thr
				65				70					75		80
Leu	Ser	Arg	Thr	Asn	Pro	Pro	Thr	Gln	Lys	Pro	Pro	Ser	Pro	Pro	Val
				85				90					95		

Ser Gly Arg Gly Thr Leu Gly Arg Asn Thr Pro Tyr Lys Thr Leu Glu
 100 105 110
 Pro Val Lys Pro Pro Thr Val Pro Asn Asp Tyr Met Thr Ser Pro Ala
 115 120 125
 Arg Leu Gly Ser Gln His Ser Pro Gly Arg Thr Ala Ser Leu Ile Arg
 130 135 140
 Asp Gln Gly Arg Ile Ser Gly Ser Ser Gly Gly Ser Gly Ser Arg Glu
 145 150 155 160
 Asn Ser Gly Ser Ser Ser Ile Gly Ile Pro Ile Ala Val Pro Thr Pro
 165 170 175
 Ser Pro Pro Thr Ala Gly Pro Ala Pro Gly Ala Ala Pro Gly Ser Gln
 180 185 190
 Tyr Gly Thr Met Thr Arg Gln Ile Ser Arg His Asn Ser Thr Thr Ser
 195 200 205
 Ser Thr Ser Ser Gly Gly Tyr Arg Arg Thr Pro Ser Val Ala Ala Gln
 210 215 220
 Phe Ser Ala Gln Pro His Val Asn Gly Gly Pro Leu Leu Phe Ser Lys
 225 230 235 240
 Phe Asn Phe Leu Leu Ala Leu Leu Leu Pro Pro Trp Pro Gln Leu Thr
 245 250 255
 Pro Gln Ile Pro Leu Thr Gly Phe Gly Gly Arg Val Gln Gly Asn Ile
 260 265 270
 Ala Asp Arg Gly Gln Thr Pro Pro Pro Pro Pro Pro Pro Asp Asp Ile
 275 280 285
 Pro Met Phe Asp Asp Ser Pro Pro Pro Pro Pro Pro Pro Val Asp
 290 295 300
 Tyr Glu Asp Glu Glu Ala Ala Val Val Gln Tyr Ser Asp Pro Tyr Ala
 305 310 315 320
 Asp Gly Asp Pro Ala Trp Ala Ser Pro Arg Thr Ile Leu Arg Lys Leu

325 330 335
 Leu Gln Tyr Met Ile Ile Tyr Gln Lys Thr Arg Met Met Ser Cys Pro
 340 345 350
 Leu Lys Glu Gly Ala Ile Ile Tyr Val Ile Lys Lys Asn Asp Asp Gly
 355 360 365
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 370 375 380
 Tyr Val Glu Ser Ile Met His Tyr Thr Asp
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<210> 258

<211> 1825

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (124).. (1392)

<400> 258

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 ctt atg gag aga aag gac ttt gag aca tgg ctt gat aac att tct gtt 168
 Met Glu Arg Lys Asp Phe Glu Thr Trp Leu Asp Asn Ile Ser Val
 1 5 10 15
 aca ttt ctt tct ctg atg gac ttg cag aaa aat gaa act ctg gac cac 216
 Thr Phe Leu Ser Leu Met Asp Leu Gln Lys Asn Glu Thr Leu Asp His
 20 25 30
 ctg att agt ctg agt ggg gca gtc cag ctc agg cat ctc tcc aat aac 264

Leu Ile Ser Leu Ser Gly Ala Val Gln Leu Arg His Leu Ser Asn Asn	
35 40 45	
ctg gag act ctc ctc aag cgg gac ttc ctc aaa ctc ctt ccc ctg gag	312
Leu Glu Thr Leu Leu Lys Arg Asp Phe Leu Lys Leu Leu Pro Leu Glu	
50 55 60	
ctc agt ttt tat ttg tta aaa tgg ctc gat cct cag act tta ctc aca	360
Leu Ser Phe Tyr Leu Leu Lys Trp Leu Asp Pro Gln Thr Leu Leu Thr	
65 70 75	
tgc tgc ctg gtc tct aag cag cgg aat aag gtg ata agt gcc tgt aca	408
Cys Cys Leu Val Ser Lys Gln Arg Asn Lys Val Ile Ser Ala Cys Thr	
80 85 90 95	
gag gtg tgg cag act gca tgt aaa aat ttg ggc tgg cag ata gat gat	456
Glu Val Trp Gln Thr Ala Cys Lys Asn Leu Gly Trp Gln Ile Asp Asp	
100 105 110	
tct gtt cag gac tca ttg cac tgg aag aag gtt tat ttg aag gct att	504
Ser Val Gln Asp Ser Leu His Trp Lys Lys Val Tyr Leu Lys Ala Ile	
115 120 125	
ttg agg atg aag caa ctg gag gac cat gaa gcc ttt gag acc tct tcg	552
Leu Arg Met Lys Gln Leu Glu Asp His Glu Ala Phe Glu Thr Ser Ser	
130 135 140	
tta att gga cat agt gcc aga gtg tat gca ctt tac tac aaa gat gga	600
Leu Ile Gly His Ser Ala Arg Val Tyr Ala Leu Tyr Tyr Lys Asp Gly	
145 150 155	
ctt ctc tgt aca ggg tca gat gac ttg tct gca aag ctg tgg gat gta	648
Leu Leu Cys Thr Gly Ser Asp Asp Leu Ser Ala Lys Leu Trp Asp Val	
160 165 170 175	
agc aca ggg cag tgt gtt tac ggc atc cag acc cac act tgt gca gct	696
Ser Thr Gly Gln Cys Val Tyr Gly Ile Gln Thr His Thr Cys Ala Ala	
180 185 190	

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gtg aag ttc gat gaa cag aag ctt gtg aca ggc tcc ttt gac aac act 744
Val Lys Phe Asp Glu Gln Lys Leu Val Thr Gly Ser Phe Asp Asn Thr
      195              200              205

gtg gcc tgc tgg gag tgg agt tcc gga gcc agg acc cag cac ttc cgg 792
Val Ala Cys Trp Glu Trp Ser Ser Gly Ala Arg Thr Gln His Phe Arg
      210              215              220

ggg cac acg ggg gcg gtg ttc agt gtg gac tac agt gat gaa ctg gat 840
Gly His Thr Gly Ala Val Phe Ser Val Asp Tyr Ser Asp Glu Leu Asp
      225              230              235

att ttg gtg agt ggc tct gcg gac ttc gct gtg aaa gta tgg gct tta 888
Ile Leu Val Ser Gly Ser Ala Asp Phe Ala Val Lys Val Trp Ala Leu
240              245              250              255

tct gct ggg aca tgc ctg aat aca ctc act ggg cat act gaa tgg gtc 936
Ser Ala Gly Thr Cys Leu Asn Thr Leu Thr Gly His Thr Glu Trp Val
      260              265              270

acc aag gtg gtt ttg cag aag tgc aaa gtc aag tct ctc ttg cac agc 984
Thr Lys Val Val Leu Gln Lys Cys Lys Val Lys Ser Leu Leu His Ser
      275              280              285

cct gga gac tac atc ctc tta agt gca gac aaa tat gag atc aag att 1032
Pro Gly Asp Tyr Ile Leu Leu Ser Ala Asp Lys Tyr Glu Ile Lys Ile
      290              295              300

tgg cca att ggg aga gaa atc aac tgt aag tgc ttg aag aca ctg tct 1080
Trp Pro Ile Gly Arg Glu Ile Asn Cys Lys Cys Leu Lys Thr Leu Ser
      305              310              315

gtc tct gag gat aga agt atc tgc ctg cag cca aga ctt cat ttt gat 1128
Val Ser Glu Asp Arg Ser Ile Cys Leu Gln Pro Arg Leu His Phe Asp
      320              325              330              335

gga aaa tac att gtc tgt agt tca gcc ctg ggt ctg tac cag tgg gac 1176
Gly Lys Tyr Ile Val Cys Ser Ser Ala Leu Gly Leu Tyr Gln Trp Asp

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    Phe Ala Ser Tyr Asp Ile Leu Arg Val Ile Lys Thr Pro Glu Val Ala

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    aac ttg gcc ttg ctt ggc ttt gga gat gtc ttc gcc ctg ctg ttt gac 1272
    Asn Leu Ala Leu Leu Gly Phe Gly Asp Val Phe Ala Leu Leu Phe Asp

          370          375          380
    aac cac tac cta tat atc atg gac ttg agg aca gag agc cta att agc 1320
    Asn His Tyr Leu Tyr Ile Met Asp Leu Arg Thr Glu Ser Leu Ile Ser

          385          390          395
    cgc tgg cct ctg cca gag tac agg aaa tca aag aga ggc acc agc ttc 1368
    Arg Trp Pro Leu Pro Glu Tyr Arg Lys Ser Lys Arg Gly Thr Ser Phe

          400          405          410          415
    ctg gca ggc gaa cgt cct ggt tga atggattgga tgggcacaat gacacgggct 1422
    Leu Ala Gly Glu Arg Pro Gly

          420
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    gctgacacca ggagctacca ccgctgactg actttgggtg ccagggctgc gggttttggg 1542
    tgcaatgtct atggcagcca actgcatgaa ccaaagtctt cacctaaagg tatcatcacg 1602
    cagtgcacaa tcatttatct gtttgccagg gctggggcgg ggagggcttg tttactgaca 1662
    tacaccgcag catgctaatt ggatacacca ttgacttcat ttgatcttag ttaigtgtgt 1722
    cagtgtgaaga gaggttgcatt ttttgatttt atctttctga gtggaatatt gagtaaagaa 1782
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<210> 259

<211> 422

<212> PRT

<213> Mus musculus

<400> 259

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 Phe Leu Ser Leu Met Asp Leu Gln Lys Asn Glu Thr Leu Asp His Leu
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 Ile Ser Leu Ser Gly Ala Val Gln Leu Arg His Leu Ser Asn Asn Leu
 35 40 45
 Glu Thr Leu Leu Lys Arg Asp Phe Leu Lys Leu Leu Pro Leu Glu Leu
 50 55 60
 Ser Phe Tyr Leu Leu Lys Trp Leu Asp Pro Gln Thr Leu Leu Thr Cys
 65 70 75 80
 Cys Leu Val Ser Lys Gln Arg Asn Lys Val Ile Ser Ala Cys Thr Glu
 85 90 95
 Val Trp Gln Thr Ala Cys Lys Asn Leu Gly Trp Gln Ile Asp Asp Ser
 100 105 110
 Val Gln Asp Ser Leu His Trp Lys Lys Val Tyr Leu Lys Ala Ile Leu
 115 120 125
 Arg Met Lys Gln Leu Glu Asp His Glu Ala Phe Glu Thr Ser Ser Leu
 130 135 140
 Ile Gly His Ser Ala Arg Val Tyr Ala Leu Tyr Tyr Lys Asp Gly Leu
 145 150 155 160
 Leu Cys Thr Gly Ser Asp Asp Leu Ser Ala Lys Leu Trp Asp Val Ser
 165 170 175
 Thr Gly Gln Cys Val Tyr Gly Ile Gln Thr His Thr Cys Ala Ala Val
 180 185 190
 Lys Phe Asp Glu Gln Lys Leu Val Thr Gly Ser Phe Asp Asn Thr Val
 195 200 205
 Ala Cys Trp Glu Trp Ser Ser Gly Ala Arg Thr Gln His Phe Arg Gly
 210 215 220

His Thr Gly Ala Val Phe Ser Val Asp Tyr Ser Asp Glu Leu Asp Ile
225 230 235 240
Leu Val Ser Gly Ser Ala Asp Phe Ala Val Lys Val Trp Ala Leu Ser
245 250 255
Ala Gly Thr Cys Leu Asn Thr Leu Thr Gly His Thr Glu Trp Val Thr
260 265 270
Lys Val Val Leu Gln Lys Cys Lys Val Lys Ser Leu Leu His Ser Pro
275 280 285
Gly Asp Tyr Ile Leu Leu Ser Ala Asp Lys Tyr Glu Ile Lys Ile Trp
290 295 300
Pro Ile Gly Arg Glu Ile Asn Cys Lys Cys Leu Lys Thr Leu Ser Val
305 310 315 320
Ser Glu Asp Arg Ser Ile Cys Leu Gln Pro Arg Leu His Phe Asp Gly
325 330 335
Lys Tyr Ile Val Cys Ser Ser Ala Leu Gly Leu Tyr Gln Trp Asp Phe
340 345 350
Ala Ser Tyr Asp Ile Leu Arg Val Ile Lys Thr Pro Glu Val Ala Asn
355 360 365
Leu Ala Leu Leu Gly Phe Gly Asp Val Phe Ala Leu Leu Phe Asp Asn
370 375 380
His Tyr Leu Tyr Ile Met Asp Leu Arg Thr Glu Ser Leu Ile Ser Arg
385 390 395 400
Trp Pro Leu Pro Glu Tyr Arg Lys Ser Lys Arg Gly Thr Ser Phe Leu
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Ala Gly Glu Arg Pro Gly
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<210> 260

<211> 1861

<212> DNA

<213> *Mus musculus*

<220>

<221> CDS

<222> (110).. (1708)

<400> 260

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                                         Met Ser Gln
                                         1
gac acc gaa gtg gac atg aaa gat gtg gag ctg aac gag cta gaa ccg 166
Asp Thr Glu Val Asp Met Lys Asp Val Glu Leu Asn Glu Leu Glu Pro
      5          10          15
gag aag cag ccc atg aat gca gcg gac ggg gcg gcg atg tcc ctg gcc 214
Glu Lys Gln Pro Met Asn Ala Ala Asp Gly Ala Ala Met Ser Leu Ala
      20          25          30          35
ggg gcc gag aag aac ggt ctg gtg aag atc aag gtg gcg gag gac gag 262
Gly Ala Glu Lys Asn Gly Leu Val Lys Ile Lys Val Ala Glu Asp Glu
              40          45          50
acg gag gcc ggg gtc gcg gct aag ttc acc ggc tta tcc aag gag gag 310
Thr Glu Ala Gly Val Ala Ala Lys Phe Thr Gly Leu Ser Lys Glu Glu
              55          60          65
cta ctg aag gta gcg ggc agc cct ggc tgg gtg cgc acc cgc tgg gcg 358
Leu Leu Lys Val Ala Gly Ser Pro Gly Trp Val Arg Thr Arg Trp Ala
              70          75          80
ctg ctg ctg ctc ttc tgg ctc ggt tgg ctg ggc atg ctg gcg ggc gcc 406
Leu Leu Leu Leu Phe Trp Leu Gly Trp Leu Gly Met Leu Ala Gly Ala

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85	90	95	
gtg gtt atc atc gtt cgg gcg ccg cgc tgc cgt gag ctg cct gta cag	454		
Val Val Ile Ile Val Arg Ala Pro Arg Cys Arg Glu Leu Pro Val Gln			
100	105	110	115
agg tgg tgg cac aag ggc gcc ctc tac cgc atc ggc gac ctt cag gcc	502		
Arg Trp Trp His Lys Gly Ala Leu Tyr Arg Ile Gly Asp Leu Gln Ala			
120	125	130	
ttt gta ggc cgg gat gcg gga ggc ata gct ggt ctg aag agc cat ctg	550		
Phe Val Gly Arg Asp Ala Gly Gly Ile Ala Gly Leu Lys Ser His Leu			
135	140	145	
gag tac ttg agc acc ctg aag gtg aag ggc ctg gtg tta ggc cca att	598		
Glu Tyr Leu Ser Thr Leu Lys Val Lys Gly Leu Val Leu Gly Pro Ile			
150	155	160	
cac aag aac cag aag gat gaa atc aat gaa acc gac ctg aaa cag att	646		
His Lys Asn Gln Lys Asp Glu Ile Asn Glu Thr Asp Leu Lys Gln Ile			
165	170	175	
aat ccc act ttg ggc tcc cag gaa gat ttt aaa gac ctt cta caa agt	694		
Asn Pro Thr Leu Gly Ser Gln Glu Asp Phe Lys Asp Leu Leu Gln Ser			
180	185	190	195
gcc aag aaa aag agc att cac atc att ttg gac ctc act ccc aac tac	742		
Ala Lys Lys Lys Ser Ile His Ile Ile Leu Asp Leu Thr Pro Asn Tyr			
200	205	210	
cag ggc cag aat gcg tgg ttc ctc cct gct cag gct gac att gta gcc	790		
Gln Gly Gln Asn Ala Trp Phe Leu Pro Ala Gln Ala Asp Ile Val Ala			
215	220	225	
acc aaa atg aag gaa gct ctg agt tct tgg ttg cag gac ggt gtg gat	838		
Thr Lys Met Lys Glu Ala Leu Ser Ser Trp Leu Gln Asp Gly Val Asp			
230	235	240	
ggc ttc caa ttc cgg gat gtg gga aag ctg atg aat gca ccc ttg tac	886		

Gly Phe Gln Phe Arg Asp Val Gly Lys Leu Met Asn Ala Pro Leu Tyr	
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255	
ttg gct gag tgg cag aat atc acc aag aac tta agt gag gac agg ctt	934
Leu Ala Glu Trp Gln Asn Ile Thr Lys Asn Leu Ser Glu Asp Arg Leu	
260	265
270	275
gtg att gca ggg act gag tcc tct gac ctg cag caa att gtc aac ata	982
Val Ile Ala Gly Thr Glu Ser Ser Asp Leu Gln Gln Ile Val Asn Ile	
280	285
290	
ctt gac tcc acc agc gac ctg ctg ttg acc agc tcc tac ctg tca aat	1030
Leu Asp Ser Thr Ser Asp Leu Leu Leu Thr Ser Ser Tyr Leu Ser Asn	
295	300
305	
tcc act cac act ggg gag cgt act gaa tcc cta gac act agg ttg gtg	1078
Ser Thr His Thr Gly Glu Arg Thr Glu Ser Leu Asp Thr Arg Leu Val	
310	315
320	
agt gcc act ggc agc cat tgg tgc agc tgg agt gtg tgc caa gca gct	1126
Ser Ala Thr Gly Ser His Trp Cys Ser Trp Ser Val Ser Gln Ala Ala	
325	330
335	
ctc ctc gca gac ttt ata ccg gac cat ctt ctc cga ctc tac cag ctg	1174
Leu Leu Ala Asp Phe Ile Pro Asp His Leu Leu Arg Leu Tyr Gln Leu	
340	345
350	355
ctg ctc ttc act ctg cca ggg act cct gtt ttt agc tac ggg gat gag	1222
Leu Leu Phe Thr Leu Pro Gly Thr Pro Val Phe Ser Tyr Gly Asp Glu	
360	365
370	
ctt ggc ctt cag ggt gcc ctt cct gga cag cct gcg aag gcc cca ctc	1270
Leu Gly Leu Gln Gly Ala Leu Pro Gly Gln Pro Ala Lys Ala Pro Leu	
375	380
385	
atg ccg tgg aat gag tcc agt atc ttt cac atc cca aga cct gta agc	1318
Met Pro Trp Asn Glu Ser Ser Ile Phe His Ile Pro Arg Pro Val Ser	
390	395
400	

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 Leu Asn Met Thr Val Lys Gly Gln Asn Glu Asp Pro Gly Ser Leu Leu
 405 410 415
 acc cag ttc cgg cgg ctg agt gac ctt cgg ggt aag gag cgc tct ctg 1414
 Thr Gln Phe Arg Arg Leu Ser Asp Leu Arg Gly Lys Glu Arg Ser Leu
 420 425 430 435
 ttg cac ggt gac ttc cat gca ctg tct tcc aca cct gac ctc ttc tcc 1462
 Leu His Gly Asp Phe His Ala Leu Ser Ser Thr Pro Asp Leu Phe Ser
 440 445 450
 tac ata cga cac tgg gac cag aat gag cgt tac ctg gtg gtg ctc aac 1510
 Tyr Ile Arg His Trp Asp Gln Asn Glu Arg Tyr Leu Val Val Leu Asn
 455 460 465
 ttc cga gat tcg ggc cgg tca gcc agg cta ggg gcc tcc aac ctc cct 1558
 Phe Arg Asp Ser Gly Arg Ser Ala Arg Leu Gly Ala Ser Asn Leu Pro
 470 475 480
 gct ggt ata agc ctg cca gcc agc gct aaa ctt ttg ctt agt acc gac 1606
 Ala Gly Ile Ser Leu Pro Ala Ser Ala Lys Leu Leu Leu Ser Thr Asp
 485 490 495
 agt gcc cgg caa agc cgt gag gag gac acc tcc ctg aag ctg gaa aac 1654
 Ser Ala Arg Gln Ser Arg Glu Glu Asp Thr Ser Leu Lys Leu Glu Asn
 500 505 510 515
 ctg agc ctg aat cct tat gag ggc ttg ctg tta cag ttc ccc ttt gtg 1702
 Leu Ser Leu Asn Pro Tyr Glu Gly Leu Leu Leu Gln Phe Pro Phe Val
 520 525 530
 gcc tga tccttcctat gcagaacctt ccaccctcct ttgttctccc caggccttgg 1758
 Ala
 gggattctag tcttcctctc cttgttttta aacttgggga gattacatac gaattcttat 1818
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<210> 261

<211> 532

<212> PRT

<213> Mus musculus

<400> 261

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Ser Leu Ala Gly Ala Glu Lys Asn Gly Leu Val Lys Ile Lys Val Ala
      35             40             45
Glu Asp Glu Thr Glu Ala Gly Val Ala Ala Lys Phe Thr Gly Leu Ser
      50             55             60
Lys Glu Glu Leu Leu Lys Val Ala Gly Ser Pro Gly Trp Val Arg Thr
      65             70             75             80
Arg Trp Ala Leu Leu Leu Leu Phe Trp Leu Gly Trp Leu Gly Met Leu
      85             90             95
Ala Gly Ala Val Val Ile Ile Val Arg Ala Pro Arg Cys Arg Glu Leu
      100            105            110
Pro Val Gln Arg Trp Trp His Lys Gly Ala Leu Tyr Arg Ile Gly Asp
      115            120            125
Leu Gln Ala Phe Val Gly Arg Asp Ala Gly Gly Ile Ala Gly Leu Lys
      130            135            140
Ser His Leu Glu Tyr Leu Ser Thr Leu Lys Val Lys Gly Leu Val Leu
      145            150            155            160
Gly Pro Ile His Lys Asn Gln Lys Asp Glu Ile Asn Glu Thr Asp Leu
      165            170            175
Lys Gln Ile Asn Pro Thr Leu Gly Ser Gln Glu Asp Phe Lys Asp Leu

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180	185	190
Leu Gln Ser Ala Lys Lys Lys Ser Ile His Ile Ile Leu Asp Leu Thr		
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Pro Asn Tyr Gln Gly Gln Asn Ala Trp Phe Leu Pro Ala Gln Ala Asp		
210	215	220
Ile Val Ala Thr Lys Met Lys Glu Ala Leu Ser Ser Trp Leu Gln Asp		
225	230	235
Gly Val Asp Gly Phe Gln Phe Arg Asp Val Gly Lys Leu Met Asn Ala		
245	250	255
Pro Leu Tyr Leu Ala Glu Trp Gln Asn Ile Thr Lys Asn Leu Ser Glu		
260	265	270
Asp Arg Leu Val Ile Ala Gly Thr Glu Ser Ser Asp Leu Gln Gln Ile		
275	280	285
Val Asn Ile Leu Asp Ser Thr Ser Asp Leu Leu Leu Thr Ser Ser Tyr		
290	295	300
Leu Ser Asn Ser Thr His Thr Gly Glu Arg Thr Glu Ser Leu Asp Thr		
305	310	315
Arg Leu Val Ser Ala Thr Gly Ser His Trp Cys Ser Trp Ser Val Ser		
325	330	335
Gln Ala Ala Leu Leu Ala Asp Phe Ile Pro Asp His Leu Leu Arg Leu		
340	345	350
Tyr Gln Leu Leu Leu Phe Thr Leu Pro Gly Thr Pro Val Phe Ser Tyr		
355	360	365
Gly Asp Glu Leu Gly Leu Gln Gly Ala Leu Pro Gly Gln Pro Ala Lys		
370	375	380
Ala Pro Leu Met Pro Trp Asn Glu Ser Ser Ile Phe His Ile Pro Arg		
385	390	395
Pro Val Ser Leu Asn Met Thr Val Lys Gly Gln Asn Glu Asp Pro Gly		
405	410	415

Ser Leu Leu Thr Gln Phe Arg Arg Leu Ser Asp Leu Arg Gly Lys Glu
 420 425 430
 Arg Ser Leu Leu His Gly Asp Phe His Ala Leu Ser Ser Thr Pro Asp
 435 440 445
 Leu Phe Ser Tyr Ile Arg His Trp Asp Gln Asn Glu Arg Tyr Leu Val
 450 455 460
 Val Leu Asn Phe Arg Asp Ser Gly Arg Ser Ala Arg Leu Gly Ala Ser
 465 470 475 480
 Asn Leu Pro Ala Gly Ile Ser Leu Pro Ala Ser Ala Lys Leu Leu Leu
 485 490 495
 Ser Thr Asp Ser Ala Arg Gln Ser Arg Glu Glu Asp Thr Ser Leu Lys
 500 505 510
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 Pro Phe Val Ala
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<210> 262

<211> 1094

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (74).. (1027)

<400> 262

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Met Pro Arg Glu Asp Arg Ala Thr Trp Lys Ser Asn																							
1						5						10											
tac	ttc	ctc	aag	atc	atc	caa	ctt	ttg	gat	gat	tat	cca	aaa	tgc	ttc	157							
Tyr	Phe	Leu	Lys	Ile	Ile	Gln	Leu	Leu	Asp	Asp	Tyr	Pro	Lys	Cys	Phe								
15						20						25											
att	gtg	gga	gca	gac	aac	gtg	ggc	tcc	aag	cag	atg	cag	cag	atc	cgc	205							
Ile	Val	Gly	Ala	Asp	Asn	Val	Gly	Ser	Lys	Gln	Met	Gln	Gln	Ile	Arg								
30						35						40											
atg	tgc	ctc	cga	ggg	aag	gcc	gtg	gtg	ctg	atg	ggc	aag	aac	acc	atg	253							
Met	Ser	Leu	Arg	Gly	Lys	Ala	Val	Val	Leu	Met	Gly	Lys	Asn	Thr	Met								
45						50						55						60					
atg	cgc	aag	gct	atc	agg	ggc	cac	ctg	gag	aac	aac	cca	gct	ctg	gag	301							
Met	Arg	Lys	Ala	Ile	Arg	Gly	His	Leu	Glu	Asn	Asn	Pro	Ala	Leu	Glu								
65						70						75											
aaa	ctg	ctg	ccg	cac	atc	cgg	ggg	aac	gtg	ggc	ttc	gtg	ttc	acc	aag	349							
Lys	Leu	Leu	Pro	His	Ile	Arg	Gly	Asn	Val	Gly	Phe	Val	Phe	Thr	Lys								
80						85						90											
gag	gac	ctc	act	gag	att	cgg	gat	atg	ctg	ttg	gcc	aat	aag	gtg	cca	397							
Glu	Asp	Leu	Thr	Glu	Ile	Arg	Asp	Met	Leu	Leu	Ala	Asn	Lys	Val	Pro								
95						100						105											
gct	gct	gct	cgg	gct	ggt	gcc	atc	gcc	ccg	tgt	gag	gtc	act	gtg	cca	445							
Ala	Ala	Ala	Arg	Ala	Gly	Ala	Ile	Ala	Pro	Cys	Glu	Val	Thr	Val	Pro								
110						115						120											
gct	cag	aac	act	ggt	cta	gga	ccc	gag	aag	acc	tcc	ttc	ttc	cag	gct	493							
Ala	Gln	Asn	Thr	Gly	Leu	Gly	Pro	Glu	Lys	Thr	Ser	Phe	Phe	Gln	Ala								
125						130						135						140					
ttg	ggc	atc	acc	acg	aaa	atc	tcc	aga	ggc	acc	att	gaa	att	ctg	agt	541							
Leu	Gly	Ile	Thr	Thr	Lys	Ile	Ser	Arg	Gly	Thr	Ile	Glu	Ile	Leu	Ser								
145						150						155											

gat gtg cag ctg ata aag act gga gac aag gtg gga gcc agc gag gcc 589
Asp Val Gln Leu Ile Lys Thr Gly Asp Lys Val Gly Ala Ser Glu Ala
160 165 170
aca ctg ctg aac atg ctg aac atc tcc ccc ttc tcc ttc ggg ctg atc 637
Thr Leu Leu Asn Met Leu Asn Ile Ser Pro Phe Ser Phe Gly Leu Ile
175 180 185
atc cag cag gtg ttt gac aac ggc agc att tat aac cct gaa gtg ctc 685
Ile Gln Gln Val Phe Asp Asn Gly Ser Ile Tyr Asn Pro Glu Val Leu
190 195 200
gac atc aca gag cag gcc ctg cac tct cgc ttt ctg gag ggt gtc cgc 733
Asp Ile Thr Glu Gln Ala Leu His Ser Arg Phe Leu Glu Gly Val Arg
205 210 215 220
aac gtg gcc agt gtg tgt ctg cag atc ggg tac cca act gtt gcc tcg 781
Asn Val Ala Ser Val Cys Leu Gln Ile Gly Tyr Pro Thr Val Ala Ser
225 230 235
gtg cca cac tcc atc atc aat ggg tac aag cgc gtc ctg gca ttg tct 829
Val Pro His Ser Ile Ile Asn Gly Tyr Lys Arg Val Leu Ala Leu Ser
240 245 250
gtg gag act gag tac acc ttc cca ctt act gaa aag gtc aag gcc ttc 877
Val Glu Thr Glu Tyr Thr Phe Pro Leu Thr Glu Lys Val Lys Ala Phe
255 260 265
ctg gct gat cca tct gca ttt gcg gct gct gcc cct gca gct gct gcc 925
Leu Ala Asp Pro Ser Ala Phe Ala Ala Ala Ala Pro Ala Ala Ala Ala
270 275 280
acc act gct gcc cct gcg gct gct gca gcc cct gcc aaa gct gaa gca 973
Thr Thr Ala Ala Pro Ala Ala Ala Ala Ala Pro Ala Lys Ala Glu Ala
285 290 295 300
aag gaa gag tcg gag gaa tca gat gag gat atg gga ttc ggt ctc ttc 1021
Lys Glu Glu Ser Glu Glu Ser Asp Glu Asp Met Gly Phe Gly Leu Phe

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Asp

aaaggcttac tictctt 1094

<210> 263

<211> 317

<212> PRT

<213> Mus musculus

<400> 263

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Asp Asn Val Gly Ser Lys Gln Met Gln Gln Ile Arg Met Ser Leu Arg

35 40 45

Gly Lys Ala Val Val Leu Met Gly Lys Asn Thr Met Met Arg Lys Ala

50 55 60

Ile Arg Gly His Leu Glu Asn Asn Pro Ala Leu Glu Lys Leu Leu Pro

65 70 75 80

His Ile Arg Gly Asn Val Gly Phe Val Phe Thr Lys Glu Asp Leu Thr

85 90 95

Glu Ile Arg Asp Met Leu Leu Ala Asn Lys Val Pro Ala Ala Ala Arg

100 105 110

Ala Gly Ala Ile Ala Pro Cys Glu Val Thr Val Pro Ala Gln Asn Thr

115 120 125

Gly Leu Gly Pro Glu Lys Thr Ser Phe Phe Gln Ala Leu Gly Ile Thr

130 135 140

Thr Lys Ile Ser Arg Gly Thr Ile Glu Ile Leu Ser Asp Val Gln Leu
 145 150 155 160
 Ile Lys Thr Gly Asp Lys Val Gly Ala Ser Glu Ala Thr Leu Leu Asn
 165 170 175
 Met Leu Asn Ile Ser Pro Phe Ser Phe Gly Leu Ile Ile Gln Gln Val
 180 185 190
 Phe Asp Asn Gly Ser Ile Tyr Asn Pro Glu Val Leu Asp Ile Thr Glu
 195 200 205
 Gln Ala Leu His Ser Arg Phe Leu Glu Gly Val Arg Asn Val Ala Ser
 210 215 220
 Val Cys Leu Gln Ile Gly Tyr Pro Thr Val Ala Ser Val Pro His Ser
 225 230 235 240
 Ile Ile Asn Gly Tyr Lys Arg Val Leu Ala Leu Ser Val Glu Thr Glu
 245 250 255
 Tyr Thr Phe Pro Leu Thr Glu Lys Val Lys Ala Phe Leu Ala Asp Pro
 260 265 270
 Ser Ala Phe Ala Ala Ala Ala Pro Ala Ala Ala Ala Thr Thr Ala Ala
 275 280 285
 Pro Ala Ala Ala Ala Ala Pro Ala Lys Ala Glu Ala Lys Glu Glu Ser
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 Glu Glu Ser Asp Glu Asp Met Gly Phe Gly Leu Phe Asp
 305 310 315

<210> 264

<211> 1584

<212> DNA

<213> Mus musculus

<400> 264

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 cgtgttttac aaatacggcg ccatccgcga catcgacctg aagaaccgcc gcgggggacc 240
 gcccttcgcc ttcggttagt tgcaggaccc gcgagacgcg gaagatgcgg tgtacggtcg 300
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 gaccggccga ggccggcgcg ggggtggagg cggcgcgccc ccgagaggcc gctatggccc 420
 gccgtccagg cggtcgaga acagagiggt tgtctctgga ctgcctccga gtggaagctg 480
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 actggataac actaagttaa gatctcacga ggtaggttat acacttattc ttttttttgg 660
 ccagaaitgg atacagtitt cttaacagtg gaatttgaag gtaaggatac aggcaagggt 720
 gttcacglaa attaccagag cctgatctg tctttgtatt cgttcagctt gtctgaagac 780
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 cacatttcaa tcattttagg attgtcaaaa ggaggattga ggaggatcag atcaataatg 1500
 gaggcaatgg tatgactcca agtgctattg tcacagatga aattggcagt attgacctta 1560
 tactagaagg cgagggtta aaaa 1584

<211> 927

<212> DNA

<213> *Mus musculus*

<220>

<221> CDS

<222> (78).. (827)

<400> 265

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      Met Thr Ile Leu Phe Leu Thr Met Val Ile Ser
              1              5              10
tac ttc ggt tgc atg aaa gcg gcg ccc atg aaa gaa gta aac gtc cac 158
Tyr Phe Gly Cys Met Lys Ala Ala Pro Met Lys Glu Val Asn Val His
              15              20              25
gga caa ggc aac ttg gcc tac cca ggt gtg cgg acc cat ggg act ctg 206
Gly Gln Gly Asn Leu Ala Tyr Pro Gly Val Arg Thr His Gly Thr Leu
              30              35              40
gag agc gtg aat ggg ccc agg gca ggt tcg aga ggt ctg acg acg aca 254
Glu Ser Val Asn Gly Pro Arg Ala Gly Ser Arg Gly Leu Thr Thr Thr
              45              50              55
tca ctg gct gac act ttt gag cac gtc atc gaa gag ctg ctg gat gag 302
Ser Leu Ala Asp Thr Phe Glu His Val Ile Glu Glu Leu Leu Asp Glu
              60              65              70              75
gac cag aag gtt cgg ccc aac gaa gaa aac cat aag gac gcg gac ttg 350
Asp Gln Lys Val Arg Pro Asn Glu Glu Asn His Lys Asp Ala Asp Leu
              80              85              90
tac act tcc cgg gtg atg ctc agc agt caa gtg cct ttg gag cct cct 398

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701/2644

tggatttaig ttgtatagat tatattgaga caaaattatc tatttgtata tatacataac 887
 aggataaatt attcagttaa gaaaaataa ttttatgaac 927

<210> 266

<211> 249

<212> PRT

<213> Mus musculus

<400> 266

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					20					25					30
Ala	Tyr	Pro	Gly	Val	Arg	Thr	His	Gly	Thr	Leu	Glu	Ser	Val	Asn	Gly
					35					40					45
Pro	Arg	Ala	Gly	Ser	Arg	Gly	Leu	Thr	Thr	Thr	Ser	Leu	Ala	Asp	Thr
					50					55					60
Phe	Glu	His	Val	Ile	Glu	Glu	Leu	Leu	Asp	Glu	Asp	Gln	Lys	Val	Arg
					65					70					75
Pro	Asn	Glu	Glu	Asn	His	Lys	Asp	Ala	Asp	Leu	Tyr	Thr	Ser	Arg	Val
					85					90					95
Met	Leu	Ser	Ser	Gln	Val	Pro	Leu	Glu	Pro	Pro	Leu	Leu	Phe	Leu	Leu
					100					105					110
Glu	Glu	Tyr	Lys	Asn	Tyr	Leu	Asp	Ala	Ala	Asn	Met	Ser	Met	Arg	Val
					115					120					125
Arg	Arg	His	Ser	Asp	Pro	Ala	Arg	Arg	Gly	Glu	Leu	Ser	Val	Cys	Asp
					130					135					140
Ser	Ile	Ser	Glu	Trp	Val	Thr	Ala	Ala	Asp	Lys	Lys	Thr	Ala	Val	Asp
					145					150					155
															160

Met Ser Gly Gly Thr Val Thr Val Leu Glu Lys Val Pro Val Ser Lys
 165 170 175
 Gly Gln Leu Lys Gln Tyr Phe Tyr Glu Thr Lys Cys Asn Pro Met Gly
 180 185 190
 Tyr Thr Lys Glu Gly Cys Arg Gly Ile Asp Lys Arg His Trp Asn Ser
 195 200 205
 Gln Cys Arg Thr Thr Gln Ser Tyr Val Arg Ala Leu Thr Met Asp Ser
 210 215 220
 Lys Lys Arg Ile Gly Trp Arg Phe Ile Arg Ile Asp Thr Ser Cys Val
 225 230 235 240
 Cys Thr Leu Thr Ile Lys Arg Gly Arg
 245

<210> 267

<211> 547

<212> DNA

<213> Mus musculus

<400> 267

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 cctactacag aggagcaatg ggcatcatgc tagtgtatga catcaccaac ggtaaaagct 180
 ttgagaacat cagcaagtgg cttagaaaca tagatgagca tgccaatgaa gatgtggaaa 240
 gaatgttact agggaacaag tgtgacatgg acgacaagag agttgtaccg aaaggcaaag 300
 gagaacagat tgcaaggag catggtatta ggttttttga gactagtga aaagcaaata 360
 taaacatcga aaaggcggttc ctcacattag ctgaagacat cctccgaaag acccctgtaa 420
 aagaacccaa cagtgaanaac gtagatatca gcagtggagg aggcgtgacg ggctggaaga 480
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<211> 825

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (21)...(800)

<400> 268

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Met Ser Lys His Lys Leu Ile Ile Leu Arg His

1

5

10

gga gag ggc caa tgg aat aag gag aac cga ttc tgt agt tgg gtg gac 101

Gly Glu Gly Gln Trp Asn Lys Glu Asn Arg Phe Cys Ser Trp Val Asp

15

20

25

cag aaa ctt aac aac gac gga ctg gag gag gct cgg aac tgt ggg agg 149

Gln Lys Leu Asn Asn Asp Gly Leu Glu Glu Ala Arg Asn Cys Gly Arg

30

35

40

cag ctc aaa gct ctc aac ttc gag ttt gat ctt gtc ttc aca tcc atc 197

Gln Leu Lys Ala Leu Asn Phe Glu Phe Asp Leu Val Phe Thr Ser Ile

45

50

55

ctt aac agg tcc att cac aca gcc tgg ctg atc ctg gaa gag ctg ggg 245

Leu Asn Arg Ser Ile His Thr Ala Trp Leu Ile Leu Glu Glu Leu Gly

60

65

70

75

cag gag tgg gtg cct gtg gag agc tcc tgg cgt ttg aat gag cgt cac 293

Gln Glu Trp Val Pro Val Glu Ser Ser Trp Arg Leu Asn Glu Arg His

80

85

90

tat gga gcc ttg att ggc ctc aac agg gag aaa atg gct ttg aat cat	341
Tyr Gly Ala Leu Ile Gly Leu Asn Arg Glu Lys Met Ala Leu Asn His	
95 100 105	
ggt gaa gag cag gta agg ctc tgg agg aga agc tac aac gtg acc cca	389
Gly Glu Glu Gln Val Arg Leu Trp Arg Arg Ser Tyr Asn Val Thr Pro	
110 115 120	
cct cct ata gag gag tct cat ccc tac ttc cac gag atc tac agt gac	437
Pro Pro Ile Glu Glu Ser His Pro Tyr Phe His Glu Ile Tyr Ser Asp	
125 130 135	
cgg agg tac aaa gtg tgc gat gtg ccc ttg gat caa ctg cca cgt tca	485
Arg Arg Tyr Lys Val Cys Asp Val Pro Leu Asp Gln Leu Pro Arg Ser	
140 145 150 155	
gaa agc ttg aag gat gtt ctg gag aga ctt ctt ccc tac tgg aag gaa	533
Glu Ser Leu Lys Asp Val Leu Glu Arg Leu Leu Pro Tyr Trp Lys Glu	
160 165 170	
agg att gct ccg gaa atc tta aag ggc aaa agc att ctg ata tct gct	581
Arg Ile Ala Pro Glu Ile Leu Lys Gly Lys Ser Ile Leu Ile Ser Ala	
175 180 185	
cac ggg aat agc agt aga gct ctc ctg aaa cat ctg gaa ggt atc tca	629
His Gly Asn Ser Ser Arg Ala Leu Leu Lys His Leu Glu Gly Ile Ser	
190 195 200	
gac gag gat att atc aac atc act ctg ccc act gga gtt ccg att ctg	677
Asp Glu Asp Ile Ile Asn Ile Thr Leu Pro Thr Gly Val Pro Ile Leu	
205 210 215	
ctg gag ttg gat gaa aac ctg cgt gcc gtt ggg cct cac cag ttc ctg	725
Leu Glu Leu Asp Glu Asn Leu Arg Ala Val Gly Pro His Gln Phe Leu	
220 225 230 235	
ggc aac cag gag gcc atc cag gca gcc att aag aaa gtg gat gat caa	773
Gly Asn Gln Glu Ala Ile Gln Ala Ala Ile Lys Lys Val Asp Asp Gln	

240 245 250
 ggg aaa gfg aaa caa ggc aaa caa taa agtgtggcca ggaacgagtt tgggg 825
 Gly Lys Val Lys Gln Gly Lys Gln

255 260

<210> 269.

<211> 259

<212> PRT

<213> Mus musculus

<400> 269

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 1 5 10 15
 Asn Lys Glu Asn Arg Phe Cys Ser Trp Val Asp Gln Lys Leu Asn Asn
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 Asp Gly Leu Glu Glu Ala Arg Asn Cys Gly Arg Gln Leu Lys Ala Leu
 35 40 45
 Asn Phe Glu Phe Asp Leu Val Phe Thr Ser Ile Leu Asn Arg Ser Ile
 50 55 60
 His Thr Ala Trp Leu Ile Leu Glu Glu Leu Gly Gln Glu Trp Val Pro
 65 70 75 80
 Val Glu Ser Ser Trp Arg Leu Asn Glu Arg His Tyr Gly Ala Leu Ile
 85 90 95
 Gly Leu Asn Arg Glu Lys Met Ala Leu Asn His Gly Glu Glu Gln Val
 100 105 110
 Arg Leu Trp Arg Arg Ser Tyr Asn Val Thr Pro Pro Pro Ile Glu Glu
 115 120 125
 Ser His Pro Tyr Phe His Glu Ile Tyr Ser Asp Arg Arg Tyr Lys Val
 130 135 140

Cys Asp Val Pro Leu Asp Gln Leu Pro Arg Ser Glu Ser Leu Lys Asp
 145 150 155 160
 Val Leu Glu Arg Leu Leu Pro Tyr Trp Lys Glu Arg Ile Ala Pro Glu
 165 170 175
 Ile Leu Lys Gly Lys Ser Ile Leu Ile Ser Ala His Gly Asn Ser Ser
 180 185 190
 Arg Ala Leu Leu Lys His Leu Glu Gly Ile Ser Asp Glu Asp Ile Ile
 195 200 205
 Asn Ile Thr Leu Pro Thr Gly Val Pro Ile Leu Leu Glu Leu Asp Glu
 210 215 220
 Asn Leu Arg Ala Val Gly Pro His Gln Phe Leu Gly Asn Gln Glu Ala
 225 230 235 240
 Ile Gln Ala Ala Ile Lys Lys Val Asp Asp Gln Gly Lys Val Lys Gln
 245 250 255
 Gly Lys Gln

<210> 270

<211> 1912

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (58).. (1665)

<400> 270

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 Met Ala Ser Leu Ser Leu Ala Pro Val Asn Ile Phe Lys Ala Gly Ala

1	5	10	15	
gat gaa gag agg gcc gag ata gct cgc ctg tgc tgc ttt atc ggt gcc				153
Asp Glu Glu Arg Ala Glu Ile Ala Arg Leu Ser Ser Phe Ile Gly Ala				
	20	25	30	
atc gcc att gga gac ttg gtg aag agc act ttg gga ccg aag ggc atg				201
Ile Ala Ile Gly Asp Leu Val Lys Ser Thr Leu Gly Pro Lys Gly Met				
	35	40	45	
gac aaa att ctc cta agc agt gga cga gac gcc gct ctg atg gtg acc				249
Asp Lys Ile Leu Leu Ser Ser Gly Arg Asp Ala Ala Leu Met Val Thr				
	50	55	60	
aac gac ggt gct acc att ctc aag aac att ggt gtg gac aac ccc gca				297
Asn Asp Gly Ala Thr Ile Leu Lys Asn Ile Gly Val Asp Asn Pro Ala				
	65	70	75	80
gca aag gtt cta gtt gat atg tca agg gtt caa gat gat gaa gtt ggt				345
Ala Lys Val Leu Val Asp Met Ser Arg Val Gln Asp Asp Glu Val Gly				
	85	90	95	
gat ggc act acc tct gtt act gtc tta gcc gca gag ctg ctc cgg gaa				393
Asp Gly Thr Thr Ser Val Thr Val Leu Ala Ala Glu Leu Leu Arg Glu				
	100	105	110	
gca gaa tct tta att gca aaa aag ata cat cca cag acc atc atc tca				441
Ala Glu Ser Leu Ile Ala Lys Lys Ile His Pro Gln Thr Ile Ile Ser				
	115	120	125	
ggt tgg aga gaa gcc aca aag gca gca aga gag gcc ctg ctg agc tcc				489
Gly Trp Arg Glu Ala Thr Lys Ala Ala Arg Glu Ala Leu Leu Ser Ser				
	130	135	140	
gct gtg gat cat ggt tct gat gaa gcc aga ttc tgg cag gac tta atg				537
Ala Val Asp His Gly Ser Asp Glu Ala Arg Phe Trp Gln Asp Leu Met				
	145	150	155	160
aac att gca gga acg aca ttg tcc tca aag ctc ctt act cac cac aag				585

Asn Ile Ala Gly Thr Thr Leu Ser Ser Lys Leu Leu Thr His His Lys
 165 170 175
 gac cac ttt act aaa ctg gcc gtg gaa gcg ggt ctc aga ctg aaa ggc 633
 Asp His Phe Thr Lys Leu Ala Val Glu Ala Gly Leu Arg Leu Lys Gly
 180 185 190
 tct ggc aac ctg gag gcg att cat gtc atc aag aaa cta ggt ggg agt 681
 Ser Gly Asn Leu Glu Ala Ile His Val Ile Lys Lys Leu Gly Gly Ser
 195 200 205
 ctg gca gac tcc tat cta gat gaa ggt ttt ctt ttg gat aaa aaa att 729
 Leu Ala Asp Ser Tyr Leu Asp Glu Gly Phe Leu Leu Asp Lys Lys Ile
 210 215 220
 gga gta aat caa cca aag aga att gaa aat gct aaa att ctt att gca 777
 Gly Val Asn Gln Pro Lys Arg Ile Glu Asn Ala Lys Ile Leu Ile Ala
 225 230 235 240
 aat act ggg atg gat aca gac aaa ata aag ata ttt ggc tct cgg gta 825
 Asn Thr Gly Met Asp Thr Asp Lys Ile Lys Ile Phe Gly Ser Arg Val
 245 250 255
 aga gtt gat tcc aca gca aag gtt gca gag ata gaa cat gca gaa aag 873
 Arg Val Asp Ser Thr Ala Lys Val Ala Glu Ile Glu His Ala Glu Lys
 260 265 270
 gag aag atg aag gag aaa gtt gaa cgt att ctt aag cat gga ata aat 921
 Glu Lys Met Lys Glu Lys Val Glu Arg Ile Leu Lys His Gly Ile Asn
 275 280 285
 tgc ttt att aac aga cag tta att tat aat tac cct gaa caa ctc ttc 969
 Cys Phe Ile Asn Arg Gln Leu Ile Tyr Asn Tyr Pro Glu Gln Leu Phe
 290 295 300
 ggc gct gct ggc gtc atg gct att gag cat gcg gat ttc gca ggt gtg 1017
 Gly Ala Ala Gly Val Met Ala Ile Glu His Ala Asp Phe Ala Gly Val
 305 310 315 320

gag cgc ctc gct ctt gtc aca ggt ggt gag att gcc tct acc ttt gat	1065
Glu Arg Leu Ala Leu Val Thr Gly Gly Glu Ile Ala Ser Thr Phe Asp	
325 330 335	
cac cca gaa ctt gtg aag ctt gga agt tgc aaa ctt att gaa gaa gtt	1113
His Pro Glu Leu Val Lys Leu Gly Ser Cys Lys Leu Ile Glu Glu Val	
340 345 350	
atg atc ggg gaa gat aaa ctc att cac ttt tct ggg gtt gcc ctt ggt	1161
Met Ile Gly Glu Asp Lys Leu Ile His Phe Ser Gly Val Ala Leu Gly	
355 360 365	
gag gca tgc acc att gtg ctt cgt ggt gcc act cag caa att ctg gat	1209
Glu Ala Cys Thr Ile Val Leu Arg Gly Ala Thr Gln Gln Ile Leu Asp	
370 375 380	
gaa gct gaa cga tct ctg cat gat gct ctt tgt gtt ctt gct cag act	1257
Glu Ala Glu Arg Ser Leu His Asp Ala Leu Cys Val Leu Ala Gln Thr	
385 390 395 400	
gta aaa gat cct aga aca gtt tac ggg gga ggc tgc tct gag atg ctg	1305
Val Lys Asp Pro Arg Thr Val Tyr Gly Gly Gly Cys Ser Glu Met Leu	
405 410 415	
atg gcc cat gct gtg aca cag ctt gcc aac aga acc cca gga aaa gaa	1353
Met Ala His Ala Val Thr Gln Leu Ala Asn Arg Thr Pro Gly Lys Glu	
420 425 430	
gct gta gca atg gag tcg ttt gca aaa gcc ctg aga atg ttg ccg acc	1401
Ala Val Ala Met Glu Ser Phe Ala Lys Ala Leu Arg Met Leu Pro Thr	
435 440 445	
atc ata gcc gac aat gcg ggc tat gac agt gca gat ctg gtg gca cag	1449
Ile Ile Ala Asp Asn Ala Gly Tyr Asp Ser Ala Asp Leu Val Ala Gln	
450 455 460	
ctc cga gct gct cac agt gaa ggc cat ata act gct gga ctg gat atg	1497
Leu Arg Ala Ala His Ser Glu Gly His Ile Thr Ala Gly Leu Asp Met	

465 470 475 480
 aag gaa ggt acc atc ggc gat atg gca gta ctg ggt ata aca gag agt 1545
 Lys Glu Gly Thr Ile Gly Asp Met Ala Val Leu Gly Ile Thr Glu Ser
 485 490 495
 ttt caa gtg aag cga cag gtt ctt ctg agt gcg gct gaa gca gca gag 1593
 Phe Gln Val Lys Arg Gln Val Leu Leu Ser Ala Ala Glu Ala Ala Glu
 500 505 510
 gtg atc ctg cga gtg gac aac att atc aaa gca gca cca agg aaa cgt 1641
 Val Ile Leu Arg Val Asp Asn Ile Ile Lys Ala Ala Pro Arg Lys Arg
 515 520 525
 gtc ccc gat cac cac ccc tgt taa gcattcccat ttgctgatga actctgggcc 1695
 Val Pro Asp His His Pro Cys
 530 535
 agttcatagc aaagttgtac ttggaagact tcaaccttta aagaagactg gtggaattga 1755
 cctgtccatg atagccttaa gtttgaacat tagctgacct tctgtgttaa acatgggtct 1815
 aatttatitta ctgtttcatt ttccatacaa ttcagttgat ttacaagttc atttttcata 1875
 ctgtgtatta aaataaaaaat ccagttactt agccctt 1912

<210> 271

<211> 535

<212> PRT

<213> Mus musculus

<400> 271

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 20 25 30
 Ile Ala Ile Gly Asp Leu Val Lys Ser Thr Leu Gly Pro Lys Gly Met

35	40	45
Asp Lys Ile Leu Leu Ser Ser Gly Arg Asp Ala Ala Leu Met Val Thr		
50	55	60
Asn Asp Gly Ala Thr Ile Leu Lys Asn Ile Gly Val Asp Asn Pro Ala		
65	70	75
Ala Lys Val Leu Val Asp Met Ser Arg Val Gln Asp Asp Glu Val Gly		
85	90	95
Asp Gly Thr Thr Ser Val Thr Val Leu Ala Ala Glu Leu Leu Arg Glu		
100	105	110
Ala Glu Ser Leu Ile Ala Lys Lys Ile His Pro Gln Thr Ile Ile Ser		
115	120	125
Gly Trp Arg Glu Ala Thr Lys Ala Ala Arg Glu Ala Leu Leu Ser Ser		
130	135	140
Ala Val Asp His Gly Ser Asp Glu Ala Arg Phe Trp Gln Asp Leu Met		
145	150	155
Asn Ile Ala Gly Thr Thr Leu Ser Ser Lys Leu Leu Thr His His Lys		
165	170	175
Asp His Phe Thr Lys Leu Ala Val Glu Ala Gly Leu Arg Leu Lys Gly		
180	185	190
Ser Gly Asn Leu Glu Ala Ile His Val Ile Lys Lys Leu Gly Gly Ser		
195	200	205
Leu Ala Asp Ser Tyr Leu Asp Glu Gly Phe Leu Leu Asp Lys Lys Ile		
210	215	220
Gly Val Asn Gln Pro Lys Arg Ile Glu Asn Ala Lys Ile Leu Ile Ala		
225	230	235
Asn Thr Gly Met Asp Thr Asp Lys Ile Lys Ile Phe Gly Ser Arg Val		
245	250	255
Arg Val Asp Ser Thr Ala Lys Val Ala Glu Ile Glu His Ala Glu Lys		
260	265	270

Glu Lys Met Lys Glu Lys Val Glu Arg Ile Leu Lys His Gly Ile Asn
 275 280 285
 Cys Phe Ile Asn Arg Gln Leu Ile Tyr Asn Tyr Pro Glu Gln Leu Phe
 290 295 300
 Gly Ala Ala Gly Val Met Ala Ile Glu His Ala Asp Phe Ala Gly Val
 305 310 315 320
 Glu Arg Leu Ala Leu Val Thr Gly Gly Glu Ile Ala Ser Thr Phe Asp
 325 330 335
 His Pro Glu Leu Val Lys Leu Gly Ser Cys Lys Leu Ile Glu Glu Val
 340 345 350
 Met Ile Gly Glu Asp Lys Leu Ile His Phe Ser Gly Val Ala Leu Gly
 355 360 365
 Glu Ala Cys Thr Ile Val Leu Arg Gly Ala Thr Gln Gln Ile Leu Asp
 370 375 380
 Glu Ala Glu Arg Ser Leu His Asp Ala Leu Cys Val Leu Ala Gln Thr
 385 390 395 400
 Val Lys Asp Pro Arg Thr Val Tyr Gly Gly Gly Cys Ser Glu Met Leu
 405 410 415
 Met Ala His Ala Val Thr Gln Leu Ala Asn Arg Thr Pro Gly Lys Glu
 420 425 430
 Ala Val Ala Met Glu Ser Phe Ala Lys Ala Leu Arg Met Leu Pro Thr
 435 440 445
 Ile Ile Ala Asp Asn Ala Gly Tyr Asp Ser Ala Asp Leu Val Ala Gln
 450 455 460
 Leu Arg Ala Ala His Ser Glu Gly His Ile Thr Ala Gly Leu Asp Met
 465 470 475 480
 Lys Glu Gly Thr Ile Gly Asp Met Ala Val Leu Gly Ile Thr Glu Ser
 485 490 495
 Phe Gln Val Lys Arg Gln Val Leu Leu Ser Ala Ala Glu Ala Ala Glu

500 505 510
 Val Ile Leu Arg Val Asp Asn Ile Ile Lys Ala Ala Pro Arg Lys Arg
 515 520 525
 Val Pro Asp His His Pro Cys
 530 535

<210> 272

<211> 1734

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (3).. (1637)

<400> 272

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 Ser Gln Gly Ile Pro Gln Leu Val Ser Asn Ile Ser Ala Cys Gln Val
 20 25 30
 att gct gag gct gta aga acc acc ctg ggt ccc cgt ggc atg gac aaa 143
 Ile Ala Glu Ala Val Arg Thr Thr Leu Gly Pro Arg Gly Met Asp Lys
 35 40 45
 ctt att gtg gat ggc cga ggc aaa gca aca ata tct aat gat ggg gcc 191
 Leu Ile Val Asp Gly Arg Gly Lys Ala Thr Ile Ser Asn Asp Gly Ala
 50 55 60
 aca att ctg aaa ctc ctc gat gtt gtc cat cct gca gca aag act ita 239

Thr	Ile	Leu	Lys	Leu	Leu	Asp	Val	Val	His	Pro	Ala	Ala	Lys	Thr	Leu		
65							70						75				
gtg	gac	ata	gcc	aag	tcc	cag	gat	gct	gag	gtt	ggg	gat	ggc	acc	acc	287	
Val	Asp	Ile	Ala	Lys	Ser	Gln	Asp	Ala	Glu	Val	Gly	Asp	Gly	Thr	Thr		
80						85					90				95		
tca	gtg	acc	ctg	ctg	gct	gcg	gag	ttt	ctg	aag	cag	gtg	aag	ccc	tac	335	
Ser	Val	Thr	Leu	Leu	Ala	Ala	Glu	Phe	Leu	Lys	Gln	Val	Lys	Pro	Tyr		
					100					105				110			
gtg	gaa	gaa	ggg	tta	cac	cct	cag	atc	atc	atc	cga	gct	ttc	cgc	aca	383	
Val	Glu	Glu	Gly	Leu	His	Pro	Gln	Ile	Ile	Ile	Arg	Ala	Phe	Arg	Thr		
				115				120					125				
gcc	acc	caa	ttg	gct	gtt	aac	aaa	atc	aaa	gag	ata	gct	gtg	act	gtg	431	
Ala	Thr	Gln	Leu	Ala	Val	Asn	Lys	Ile	Lys	Glu	Ile	Ala	Val	Thr	Val		
				130				135					140				
aag	aag	caa	gat	aaa	gta	gag	cag	agg	aag	atg	ctg	gag	aag	tgt	gcg	479	
Lys	Lys	Gln	Asp	Lys	Val	Glu	Gln	Arg	Lys	Met	Leu	Glu	Lys	Cys	Ala		
				145				150					155				
atg	aca	gcc	ctg	agc	tcc	aag	ctg	atc	tcc	cag	cag	aag	gtc	ttc	ttc	527	
Met	Thr	Ala	Leu	Ser	Ser	Lys	Leu	Ile	Ser	Gln	Gln	Lys	Val	Phe	Phe		
160						165				170				175			
gcc	aag	atg	gtg	gtt	gat	gcc	gtg	atg	atg	ctt	gac	gag	ctg	ctg	cag	575	
Ala	Lys	Met	Val	Val	Asp	Ala	Val	Met	Met	Leu	Asp	Glu	Leu	Leu	Gln		
						180				185				190			
ctt	aaa	atg	att	ggc	atc	aag	aag	gtg	cag	ggg	gga	gcc	ctg	gag	gag	623	
Leu	Lys	Met	Ile	Gly	Ile	Lys	Lys	Val	Gln	Gly	Gly	Ala	Leu	Glu	Glu		
				195				200					205				
tct	cag	cta	gtt	gct	ggg	gtt	gcg	ttc	aag	aag	act	ttc	tct	tat	gct	671	
Ser	Gln	Leu	Val	Ala	Gly	Val	Ala	Phe	Lys	Lys	Thr	Phe	Ser	Tyr	Ala		
				210				215					220				

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ggg ttt gaa atg cag ccc aag aag tat aag aac ccc aag att gcc ctc 719
Gly Phe Glu Met Gln Pro Lys Lys Tyr Lys Asn Pro Lys Ile Ala Leu
      225              230              235

tta aat gtt gag ctt gag ctg aaa gca gag aaa gat aat gct gaa atc 767
Leu Asn Val Glu Leu Glu Leu Lys Ala Glu Lys Asp Asn Ala Glu Ile
240              245              250              255

aga gtc cac aca gtg gag gat tac cag gca att gtt gat gcc gag tgg 815
Arg Val His Thr Val Glu Asp Tyr Gln Ala Ile Val Asp Ala Glu Trp
      260              265              270

aat att ctc tat gac aag tta gag aag atc cat cag tct gga gcc aaa 863
Asn Ile Leu Tyr Asp Lys Leu Glu Lys Ile His Gln Ser Gly Ala Lys
      275              280              285

gtc atc ttg tct aaa ctc cct att ggg gat gtg gcc acc cag tac ttt 911
Val Ile Leu Ser Lys Leu Pro Ile Gly Asp Val Ala Thr Gln Tyr Phe
      290              295              300

gct gat agg gac atg ttc tgt gct ggc cga gtg cct gag gag gat ctg 959
Ala Asp Arg Asp Met Phe Cys Ala Gly Arg Val Pro Glu Glu Asp Leu
      305              310              315

aag agg acg atg atg gct tgt gga ggc tca atc cag acc agt gtg aat 1007
Lys Arg Thr Met Met Ala Cys Gly Gly Ser Ile Gln Thr Ser Val Asn
320              325              330              335

gct ctg gtt cca gat gtg ctg ggc cac tgc caa gtg ttt gaa gag acc 1055
Ala Leu Val Pro Asp Val Leu Gly His Cys Gln Val Phe Glu Glu Thr
      340              345              350

caa att gga gga gag agg tac aat ttc ttc act ggc tgc cct aag gcc 1103
Gln Ile Gly Gly Glu Arg Tyr Asn Phe Phe Thr Gly Cys Pro Lys Ala
      355              360              365

aag aca tgt acc atc atc ctc cgt ggt ggc gct gag cag ttt atg gaa 1151
Lys Thr Cys Thr Ile Ile Leu Arg Gly Gly Ala Glu Gln Phe Met Glu

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370	375	380	
gag aca gag agg tcc cta cat gat gcc atc atg att gtg agg agg gcc			1199
Glu Thr Glu Arg Ser Leu His Asp Ala Ile Met Ile Val Arg Arg Ala			
385	390	395	
atc aag aat gac tct gtg gtg gct ggt ggt gga gcc atc gag atg gaa			1247
Ile Lys Asn Asp Ser Val Val Ala Gly Gly Gly Ala Ile Glu Met Glu			
400	405	410	415
ctt tcc aaa tac ctg cgg gat tac tcg agg acc att cct ggg aag cag			1295
Leu Ser Lys Tyr Leu Arg Asp Tyr Ser Arg Thr Ile Pro Gly Lys Gln			
420	425	430	
cag ctg ttg att ggg gca tat gcc aag gcc ctg gag att att cca cga			1343
Gln Leu Leu Ile Gly Ala Tyr Ala Lys Ala Leu Glu Ile Ile Pro Arg			
435	440	445	
cag cta tgt gac aac gct ggc ttt gat gcc aca aac atc ctc aac aag			1391
Gln Leu Cys Asp Asn Ala Gly Phe Asp Ala Thr Asn Ile Leu Asn Lys			
450	455	460	
ctg cgg gct cga cac gca cag gga ggt atg tgg tat ggg gtg gac atc			1439
Leu Arg Ala Arg His Ala Gln Gly Gly Met Trp Tyr Gly Val Asp Ile			
465	470	475	
aac aat gag aac atc gcc gac aac ttc cag gca ttt gtg tgg gag cca			1487
Asn Asn Glu Asn Ile Ala Asp Asn Phe Gln Ala Phe Val Trp Glu Pro			
480	485	490	495
gcc atg gtg cgc atc aac gct ctg aca gca gct tct gag gct gca tgc			1535
Ala Met Val Arg Ile Asn Ala Leu Thr Ala Ala Ser Glu Ala Ala Cys			
500	505	510	
ctt att gtg tcc gtg gat gag act atc aag aac ccc cgc tcc act gtg			1583
Leu Ile Val Ser Val Asp Glu Thr Ile Lys Asn Pro Arg Ser Thr Val			
515	520	525	
gat cct cca gct cca tca gct ggc cgt ggc aga ggc caa gcc cgc ttc			1631

Asp Pro Pro Ala Pro Ser Ala Gly Arg Gly Arg Gly Gln Ala Arg Phe
 530 535 540
 cac tga gaggcgaggc ggctctgcacc tccttgtgag gtgagggggt ggaigagaag 1687
 His
 545
 atggttgctg gtctgctggg ttctcactga ggtatttaa ataaagc 1734

<210> 273

<211> 544

<212> PRT

<213> Mus musculus

<400> 273

Met Met Pro Thr Pro Val Ile Leu Leu Lys Glu Gly Thr Asp Ser Ser
 1 5 10 15
 Gln Gly Ile Pro Gln Leu Val Ser Asn Ile Ser Ala Cys Gln Val Ile
 20 25 30
 Ala Glu Ala Val Arg Thr Thr Leu Gly Pro Arg Gly Met Asp Lys Leu
 35 40 45
 Ile Val Asp Gly Arg Gly Lys Ala Thr Ile Ser Asn Asp Gly Ala Thr
 50 55 60
 Ile Leu Lys Leu Leu Asp Val Val His Pro Ala Ala Lys Thr Leu Val
 65 70 75 80
 Asp Ile Ala Lys Ser Gln Asp Ala Glu Val Gly Asp Gly Thr Thr Ser
 85 90 95
 Val Thr Leu Leu Ala Ala Glu Phe Leu Lys Gln Val Lys Pro Tyr Val
 100 105 110
 Glu Glu Gly Leu His Pro Gln Ile Ile Ile Arg Ala Phe Arg Thr Ala
 115 120 125

Thr Gln Leu Ala Val Asn Lys Ile Lys Glu Ile Ala Val Thr Val Lys
 130 135 140
 Lys Gln Asp Lys Val Glu Gln Arg Lys Met Leu Glu Lys Cys Ala Met
 145 150 155 160
 Thr Ala Leu Ser Ser Lys Leu Ile Ser Gln Gln Lys Val Phe Phe Ala
 165 170 175
 Lys Met Val Val Asp Ala Val Met Met Leu Asp Glu Leu Leu Gln Leu
 180 185 190
 Lys Met Ile Gly Ile Lys Lys Val Gln Gly Gly Ala Leu Glu Glu Ser
 195 200 205
 Gln Leu Val Ala Gly Val Ala Phe Lys Lys Thr Phe Ser Tyr Ala Gly
 210 215 220
 Phe Glu Met Gln Pro Lys Lys Tyr Lys Asn Pro Lys Ile Ala Leu Leu
 225 230 235 240
 Asn Val Glu Leu Glu Leu Lys Ala Glu Lys Asp Asn Ala Glu Ile Arg
 245 250 255
 Val His Thr Val Glu Asp Tyr Gln Ala Ile Val Asp Ala Glu Trp Asn
 260 265 270
 Ile Leu Tyr Asp Lys Leu Glu Lys Ile His Gln Ser Gly Ala Lys Val
 275 280 285
 Ile Leu Ser Lys Leu Pro Ile Gly Asp Val Ala Thr Gln Tyr Phe Ala
 290 295 300
 Asp Arg Asp Met Phe Cys Ala Gly Arg Val Pro Glu Glu Asp Leu Lys
 305 310 315 320
 Arg Thr Met Met Ala Cys Gly Gly Ser Ile Gln Thr Ser Val Asn Ala
 325 330 335
 Leu Val Pro Asp Val Leu Gly His Cys Gln Val Phe Glu Glu Thr Gln
 340 345 350
 Ile Gly Gly Glu Arg Tyr Asn Phe Phe Thr Gly Cys Pro Lys Ala Lys

355	360	365
Thr Cys Thr Ile Ile Leu Arg Gly Gly Ala Glu Gln Phe Met Glu Glu		
370	375	380
Thr Glu Arg Ser Leu His Asp Ala Ile Met Ile Val Arg Arg Ala Ile		
385	390	395
Lys Asn Asp Ser Val Val Ala Gly Gly Gly Ala Ile Glu Met Glu Leu		
405	410	415
Ser Lys Tyr Leu Arg Asp Tyr Ser Arg Thr Ile Pro Gly Lys Gln Gln		
420	425	430
Leu Leu Ile Gly Ala Tyr Ala Lys Ala Leu Glu Ile Ile Pro Arg Gln		
435	440	445
Leu Cys Asp Asn Ala Gly Phe Asp Ala Thr Asn Ile Leu Asn Lys Leu		
450	455	460
Arg Ala Arg His Ala Gln Gly Gly Met Trp Tyr Gly Val Asp Ile Asn		
465	470	475
Asn Glu Asn Ile Ala Asp Asn Phe Gln Ala Phe Val Trp Glu Pro Ala		
485	490	495
Met Val Arg Ile Asn Ala Leu Thr Ala Ala Ser Glu Ala Ala Cys Leu		
500	505	510
Ile Val Ser Val Asp Glu Thr Ile Lys Asn Pro Arg Ser Thr Val Asp		
515	520	525
Pro Pro Ala Pro Ser Ala Gly Arg Gly Arg Gly Gln Ala Arg Phe His		
530	535	540

<210> 274

<211> 490

<212> DNA

<213> Mus musculus

<400> 274

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aaccctaatta catcaagaag ttigcatcag gttgctgtga caacctcatic aagctatgga 120
gggaagagga ggaatggccag tgaagaggagg agcagaagct agaggcacac agcgactggg 180
tccgagatgt tgcctggggc ccttccattg gcttgccac cagcaccatt gccagctgct 240
ctcaggatgg tcgagtgttt atttggaacct gtgacgatgc ctcaggcaat atgtggtcac 300
ctaaactcct acacaagtic aatgatgttg tgtggcacgt gagctgggtc atcacagcca 360
acatcctggc tgtgtcagggt ggagacaata aggtagacct gtggaaagag tcggtggacg 420
gacagtgggt gtgcatcagt gacgtcaaca agggccagggt ttctgtgtca gcctccatca 480
cagagggccca 490

<210> 275

<211> 2189

<212> DNA

<213> *Mus musculus*

<220>

<221> CDS

<222> (55).. (1650)

<400> 275

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Met
1.
gcg gcg gta aag acc cta aat ccg aag gcc gag gtg gcc cgg gcc cag 105
Ala Ala Val Lys Thr Leu Asn Pro Lys Ala Glu Val Ala Arg Ala Gln
5 10 15
gca gcg ctg gcg gtg aac atc agc gcg gct cgg ggc ctg cag gat gtt 153
Ala Ala Leu Ala Val Asn Ile Ser Ala Ala Arg Gly Leu Gln Asp Val

20	25	30	
ctg agg acc aac ttg ggg cct aag ggc acc atg aag atg ctt gta tct	201		
Leu Arg Thr Asn Leu Gly Pro Lys Gly Thr Met Lys Met Leu Val Ser			
35	40	45	
ggt gct gga gac atc aaa ctt act aaa gat ggc aat gtg ctg ctt cat	249		
Gly Ala Gly Asp Ile Lys Leu Thr Lys Asp Gly Asn Val Leu Leu His			
50	55	60	65
gaa atg caa att caa cac cca aca gcc tct ttg ata gca aaa gtg gct	297		
Glu Met Gln Ile Gln His Pro Thr Ala Ser Leu Ile Ala Lys Val Ala			
70	75	80	
aca gcc cag gat gac ata act ggc gat ggc act aca tcc aat gtc ctc	345		
Thr Ala Gln Asp Asp Ile Thr Gly Asp Gly Thr Thr Ser Asn Val Leu			
85	90	95	
atc atc ggg gag ctg ctc aaa cag gcg gac ctg tac att tct gaa ggt	393		
Ile Ile Gly Glu Leu Leu Lys Gln Ala Asp Leu Tyr Ile Ser Glu Gly			
100	105	110	
ctt cac cca aga ata ata act gaa ggt ttt gaa gcg gca aaa gaa aag	441		
Leu His Pro Arg Ile Ile Thr Glu Gly Phe Glu Ala Ala Lys Glu Lys			
115	120	125	
gca ctc caa ttt ctg gaa caa gtc aaa gta agc aaa gag atg gac aga	489		
Ala Leu Gln Phe Leu Glu Gln Val Lys Val Ser Lys Glu Met Asp Arg			
130	135	140	145
gaa aca ctc atc gat gtg gcc agg aca tct ctg cgg act aaa gtt cat	537		
Glu Thr Leu Ile Asp Val Ala Arg Thr Ser Leu Arg Thr Lys Val His			
150	155	160	
gct gaa ctt gca gat gtc ttg aca gag gct gta gtg gac tcc atc ttg	585		
Ala Glu Leu Ala Asp Val Leu Thr Glu Ala Val Val Asp Ser Ile Leu			
165	170	175	
gcc att agg aaa aag gac gag ccc att gac ctc ttc atg gtt gag atc	633		

Ala Ile Arg Lys Lys Asp Glu Pro Ile Asp Leu Phe Met Val Glu Ile
180 185 190
atg gag atg aag cat aaa tct gag aca gat aca agc tta atc aga ggg 681
Met Glu Met Lys His Lys Ser Glu Thr Asp Thr Ser Leu Ile Arg Gly
195 200 205
ctt gtt ttg gat cat gga gct cgg cat cct gat atg aag aag aga gtg 729
Leu Val Leu Asp His Gly Ala Arg His Pro Asp Met Lys Lys Arg Val
210 215 220 225
gaa aat gcc tac atc ctc acg tgc aac gtg tcc tta gag tat gag aaa 777
Glu Asn Ala Tyr Ile Leu Thr Cys Asn Val Ser Leu Glu Tyr Glu Lys
230 235 240
aca gaa gtg aat tct ggg ttt ttt tac aag agt gca gaa gag aga gaa 825
Thr Glu Val Asn Ser Gly Phe Phe Tyr Lys Ser Ala Glu Glu Arg Glu
245 250 255
aaa cta gta aag gct gaa aga aaa ttc att gaa gat aga gtt aaa aaa 873
Lys Leu Val Lys Ala Glu Arg Lys Phe Ile Glu Asp Arg Val Lys Lys
260 265 270
atc ata gag ctg aaa aag aaa gtc tgt ggt gac tca gat aaa gga ttt 921
Ile Ile Glu Leu Lys Lys Lys Val Cys Gly Asp Ser Asp Lys Gly Phe
275 280 285
gtc gtt att aat caa aag ggg att gac ccc ttt tcc tta gat gcc ctt 969
Val Val Ile Asn Gln Lys Gly Ile Asp Pro Phe Ser Leu Asp Ala Leu
290 295 300 305
gcg aaa gaa ggg atc gta gct ctg cgc aga gcc aag agg aga aac atg 1017
Ala Lys Glu Gly Ile Val Ala Leu Arg Arg Ala Lys Arg Arg Asn Met
310 315 320
gag agg ctg aca ctt gct tgt ggt ggg ata gct ctg aat tcc ttt gat 1065
Glu Arg Leu Thr Leu Ala Cys Gly Gly Ile Ala Leu Asn Ser Phe Asp
325 330 335

gac ctg aat cct gac tgt ttg gga cat gca ggg ctt gtc tat gag tat	1113
Asp Leu Asn Pro Asp Cys Leu Gly His Ala Gly Leu Val Tyr Glu Tyr	
340 345 350	
aca ctg ggt gag gag aag ttc acc ttt att gag aag tgt aac aat ccc	1161
Thr Leu Gly Glu Glu Lys Phe Thr Phe Ile Glu Lys Cys Asn Asn Pro	
355 360 365	
cgt tct gtc act tta ctg gtt aaa gga cca aat aag cac aca ctg act	1209
Arg Ser Val Thr Leu Leu Val Lys Gly Pro Asn Lys His Thr Leu Thr	
370 375 380 385	
caa atc aag gat gca ata aga gat ggc ttg agg gct gtc aaa aat gct	1257
Gln Ile Lys Asp Ala Ile Arg Asp Gly Leu Arg Ala Val Lys Asn Ala	
390 395 400	
att gat gat ggc tgt gtt gtc cca ggt gcg ggt gca gta gaa gtg gca	1305
Ile Asp Asp Gly Cys Val Val Pro Gly Ala Gly Ala Val Glu Val Ala	
405 410 415	
ctg gca gaa gct ctg att aaa tac aag ccc agt gtg aag ggc agg gcg	1353
Leu Ala Glu Ala Leu Ile Lys Tyr Lys Pro Ser Val Lys Gly Arg Ala	
420 425 430	
cag ctt gga gtc cag gca ttt gca gat gcc ttg ctc atc att ccc aag	1401
Gln Leu Gly Val Gln Ala Phe Ala Asp Ala Leu Leu Ile Ile Pro Lys	
435 440 445	
gtt ctt gcg caa aac tct ggt ttt gac ctt cag gaa aca tta gtt aaa	1449
Val Leu Ala Gln Asn Ser Gly Phe Asp Leu Gln Glu Thr Leu Val Lys	
450 455 460 465	
gtt caa gct gaa cat tca gaa tcg ggc cag ctc gta ggt gtg gat ctg	1497
Val Gln Ala Glu His Ser Glu Ser Gly Gln Leu Val Gly Val Asp Leu	
470 475 480	
agc aca ggt gag ccg atg gtg gcc gca gag atg ggt gtg tgg gat aac	1545
Ser Thr Gly Glu Pro Met Val Ala Ala Glu Met Gly Val Trp Asp Asn	

485 490 495
 tac tgt gtg aag aag cag ctg cta cac tcc tgt act gtg atc gcc acc 1593
 Tyr Cys Val Lys Lys Gln Leu Leu His Ser Cys Thr Val Ile Ala Thr
 500 505 510
 aac att ctc ctg gtc gac gag atc atg cga gct ggg atg tcc tct ctg 1641
 Asn Ile Leu Leu Val Asp Glu Ile Met Arg Ala Gly Met Ser Ser Leu
 515 520 525
 aag ggt tga ggccctgccctg tgatactaca ggatgttggg gggaatggtt 1690
 Lys Gly
 530
 atttttgtcc aagcttcaag tgatttggaa aaaaattttc tcttcctgat tggagaaaag 1750
 aaacgggaca ttgacacct attcaaatta tactgtaaaa ttttatitta tttttgcctt 1810
 gagtatctga agacactcaa agcagctcctt ttccaaccca ctgaacaaga tgttttagct 1870
 acaccgatac aaaaattaca taataagata agcatgttgt ctacccttgt tccataagtg 1930
 ttctttgaaa gtttgtaatg gttttctcct aaataaggca tggtagacaca tgcctgtaag 1990
 cctagccctt tggaaatagt ccggaatttc tatgccaact caggctacag gagaccccag 2050
 gtcgaaagaa taatttgttg tggatgtatt tgaaattatc cagccaactc cctgttaaac 2110
 atgtaagatc cttgccagtg taaaacacat ctgggttaatt tatgggttgc ataattgtcta 2170
 ataaatactt aaaagagtg 2189

<210> 276

<211> 531

<212> PRT

<213> Mus musculus

<400> 276

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 Gln Ala Ala Leu Ala Val Asn Ile Ser Ala Ala Arg Gly Leu Gln Asp

20	25	30	
Val Leu Arg Thr Asn Leu Gly Pro Lys Gly Thr Met Lys Met Leu Val			
35	40	45	
Ser Gly Ala Gly Asp Ile Lys Leu Thr Lys Asp Gly Asn Val Leu Leu			
50	55	60	
His Glu Met Gln Ile Gln His Pro Thr Ala Ser Leu Ile Ala Lys Val			
65	70	75	80
Ala Thr Ala Gln Asp Asp Ile Thr Gly Asp Gly Thr Thr Ser Asn Val			
85	90	95	
Leu Ile Ile Gly Glu Leu Leu Lys Gln Ala Asp Leu Tyr Ile Ser Glu			
100	105	110	
Gly Leu His Pro Arg Ile Ile Thr Glu Gly Phe Glu Ala Ala Lys Glu			
115	120	125	
Lys Ala Leu Gln Phe Leu Glu Gln Val Lys Val Ser Lys Glu Met Asp			
130	135	140	
Arg Glu Thr Leu Ile Asp Val Ala Arg Thr Ser Leu Arg Thr Lys Val			
145	150	155	160
His Ala Glu Leu Ala Asp Val Leu Thr Glu Ala Val Val Asp Ser Ile			
165	170	175	
Leu Ala Ile Arg Lys Lys Asp Glu Pro Ile Asp Leu Phe Met Val Glu			
180	185	190	
Ile Met Glu Met Lys His Lys Ser Glu Thr Asp Thr Ser Leu Ile Arg			
195	200	205	
Gly Leu Val Leu Asp His Gly Ala Arg His Pro Asp Met Lys Lys Arg			
210	215	220	
Val Glu Asn Ala Tyr Ile Leu Thr Cys Asn Val Ser Leu Glu Tyr Glu			
225	230	235	240
Lys Thr Glu Val Asn Ser Gly Phe Phe Tyr Lys Ser Ala Glu Glu Arg			
245	250	255	

Glu Lys Leu Val Lys Ala Glu Arg Lys Phe Ile Glu Asp Arg Val Lys
 260 265 270
 Lys Ile Ile Glu Leu Lys Lys Lys Val Cys Gly Asp Ser Asp Lys Gly
 275 280 285
 Phe Val Val Ile Asn Gln Lys Gly Ile Asp Pro Phe Ser Leu Asp Ala
 290 295 300
 Leu Ala Lys Glu Gly Ile Val Ala Leu Arg Arg Ala Lys Arg Arg Asn
 305 310 315 320
 Met Glu Arg Leu Thr Leu Ala Cys Gly Gly Ile Ala Leu Asn Ser Phe
 325 330 335
 Asp Asp Leu Asn Pro Asp Cys Leu Gly His Ala Gly Leu Val Tyr Glu
 340 345 350
 Tyr Thr Leu Gly Glu Glu Lys Phe Thr Phe Ile Glu Lys Cys Asn Asn
 355 360 365
 Pro Arg Ser Val Thr Leu Leu Val Lys Gly Pro Asn Lys His Thr Leu
 370 375 380
 Thr Gln Ile Lys Asp Ala Ile Arg Asp Gly Leu Arg Ala Val Lys Asn
 385 390 395 400
 Ala Ile Asp Asp Gly Cys Val Val Pro Gly Ala Gly Ala Val Glu Val
 405 410 415
 Ala Leu Ala Glu Ala Leu Ile Lys Tyr Lys Pro Ser Val Lys Gly Arg
 420 425 430
 Ala Gln Leu Gly Val Gln Ala Phe Ala Asp Ala Leu Leu Ile Ile Pro
 435 440 445
 Lys Val Leu Ala Gln Asn Ser Gly Phe Asp Leu Gln Glu Thr Leu Val
 450 455 460
 Lys Val Gln Ala Glu His Ser Glu Ser Gly Gln Leu Val Gly Val Asp
 465 470 475 480
 Leu Ser Thr Gly Glu Pro Met Val Ala Ala Glu Met Gly Val Trp Asp

	485		490		495
Asn Tyr Cys Val Lys Lys Gln Leu Leu His Ser Cys Thr Val Ile Ala					
	500		505		510
Thr Asn Ile Leu Leu Val Asp Glu Ile Met Arg Ala Gly Met Ser Ser					
	515		520		525
Leu Lys Gly					
	530				

<210> 277

<211> 421

<212> DNA

<213> Mus musculus

<400> 277

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ggacctcaag acaagtagga gagcggacct gacgggtaca gtaatagaca gtggagacgg 60
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ccaatcgag gaagagatat aacataatatt attcagcaac tgctgcgaga ccgagaagta 180
ggaatccctc ctgagcagtc cttggaaact gcgaaacaga tgaaggaacg ctacagttat 240
gtctgcccg atttagtaaa agagtttaac aagtatgaca ccgatgggtc aaagtggatc 300
aaacagtaca ccggagtcaa cgccatctca aagaaagagt tttctattga tgttggctat 360
gagcgattcc tgggaccoga gatctttttc catccagagt ttgctaatec agattttaca 420
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421

<210> 278

<211> 1247

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (81).. (1184)

<400> 278

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 aggagttgag ttaaaagaag atg gat gca cag agt tca gct aaa gtc aat tcg 113

Met Asp Ala Gln Ser Ser Ala Lys Val Asn Ser

1

5

10

agg aag agg agg aaa gag gca cct ggc cct aat gga gca aca gag gaa 161

Arg Lys Arg Arg Lys Glu Ala Pro Gly Pro Asn Gly Ala Thr Glu Glu

15

20

25

gat gga att cct tcc aaa gtg cag cgt tgc gca gtt ggt tta cgg cag 209

Asp Gly Ile Pro Ser Lys Val Gln Arg Cys Ala Val Gly Leu Arg Gln

30

35

40

cca gct cct ttt tct gat gaa att gaa gtt gac ttt agt aag ccc tat 257

Pro Ala Pro Phe Ser Asp Glu Ile Glu Val Asp Phe Ser Lys Pro Tyr

45

50

55

gtc agg gtg act atg gaa gaa gcc tgc agg gga act ccg tgt gag cgg 305

Val Arg Val Thr Met Glu Glu Ala Cys Arg Gly Thr Pro Cys Glu Arg

60

65

70

75

cct gtg aga gtt tat gcg gat gga ata ttt gac ttg ttt cac tct ggt 353

Pro Val Arg Val Tyr Ala Asp Gly Ile Phe Asp Leu Phe His Ser Gly

80

85

90

cat gcc cgg gct ctg atg caa gca aag aac ctt ttc cct aat acg tat 401

His Ala Arg Ala Leu Met Gln Ala Lys Asn Leu Phe Pro Asn Thr Tyr

95

100

105

cta att gtg gga gtc tgc agt gat gag cta acg cac aac ttc aag ggc 449

Leu Ile Val Gly Val Cys Ser Asp Glu Leu Thr His Asn Phe Lys Gly

110

115

120

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ttc act gtg atg aac gag aat gag cgc tat gac gcc gtg cag cac tgc 497
Phe Thr Val Met Asn Glu Asn Glu Arg Tyr Asp Ala Val Gln His Cys
      125              130              135
cgc tac gtg gac gag gtg gtg cgg aac gcc ccc tgg act ctg acg cct 545
Arg Tyr Val Asp Glu Val Val Arg Asn Ala Pro Trp Thr Leu Thr Pro
      140              145              150              155
gag ttc ctg gca gag cac cgg att gat ttt gtc gcc cat gac gac atc 593
Glu Phe Leu Ala Glu His Arg Ile Asp Phe Val Ala His Asp Asp Ile
              160              165              170
ccc tat tct tct gca ggg agc gat gat gtg tat aag cac atc aag gac 641
Pro Tyr Ser Ser Ala Gly Ser Asp Asp Val Tyr Lys His Ile Lys Asp
              175              180              185
gca ggc atg ttt gct ccc aca cag agg aca gaa ggt atc tcc aca tca 689
Ala Gly Met Phe Ala Pro Thr Gln Arg Thr Glu Gly Ile Ser Thr Ser
              190              195              200
gac atc atc acc cgc att gtc cgt gac tat gat gtg tat gca aga cgg 737
Asp Ile Ile Thr Arg Ile Val Arg Asp Tyr Asp Val Tyr Ala Arg Arg
              205              210              215
aac cta cag agg ggc tac act gcc aag gag ctc aat gtc agc ttt atc 785
Asn Leu Gln Arg Gly Tyr Thr Ala Lys Glu Leu Asn Val Ser Phe Ile
      220              225              230              235
aac gag aag aaa tac cac ttg caa gaa cga gtt gat aaa gta aag aag 833
Asn Glu Lys Lys Tyr His Leu Gln Glu Arg Val Asp Lys Val Lys Lys
              240              245              250
aaa gtg aaa gat gtg gag gaa aag tca aaa gag ttt gtg cag aag gtg 881
Lys Val Lys Asp Val Glu Glu Lys Ser Lys Glu Phe Val Gln Lys Val
              255              260              265
gaa gag aag agc atc gac ctc atc cag aag tgg gag gag aag tcc cga 929
Glu Glu Lys Ser Ile Asp Leu Ile Gln Lys Trp Glu Glu Lys Ser Arg

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270	275	280	
gag ttc att gga agt ttc ctg gaa atg ttt ggt cca gaa gga gca ctg			977
Glu Phe Ile Gly Ser Phe Leu Glu Met Phe Gly Pro Glu Gly Ala Leu			
285	290	295	
aag cac atg ctg aag gag gga aaa ggt cgg atg ctg cag gcc atc agt			1025
Lys His Met Leu Lys Glu Gly Lys Gly Arg Met Leu Gln Ala Ile Ser			
300	305	310	315
ccc aag cag agc ccc agc agc agc cct act cat gag cgc tcc ccc tcc			1073
Pro Lys Gln Ser Pro Ser Ser Ser Pro Thr His Glu Arg Ser Pro Ser			
	320	325	330
ccc tcc ttt cgg tgg ccc ttc tct ggc aag act tcc cca tct tcc tcc			1121
Pro Ser Phe Arg Trp Pro Phe Ser Gly Lys Thr Ser Pro Ser Ser Ser			
	335	340	345
cca gca agt ctt tct agg tgc agg gct gtg acc tgt gac atc agc gag			1169
Pro Ala Ser Leu Ser Arg Cys Arg Ala Val Thr Cys Asp Ile Ser Glu			
350	355	360	
gat gaa gag gac taa cttttcatcc ctgttccctc tctccccac tgcccatcac			1224
Asp Glu Glu Asp			
365			
ctccagaagc tctctgtcga att			1247

<210> 279

<211> 367

<212> PRT

<213> Mus musculus

<400> 279

Met Asp Ala Gln Ser Ser Ala Lys Val Asn Ser Arg Lys Arg Arg Lys

1

5

10

15

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 20 25 30
 Lys Val Gln Arg Cys Ala Val Gly Leu Arg Gln Pro Ala Pro Phe Ser
 35 40 45
 Asp Glu Ile Glu Val Asp Phe Ser Lys Pro Tyr Val Arg Val Thr Met
 50 55 60
 Glu Glu Ala Cys Arg Gly Thr Pro Cys Glu Arg Pro Val Arg Val Tyr
 65 70 75 80
 Ala Asp Gly Ile Phe Asp Leu Phe His Ser Gly His Ala Arg Ala Leu
 85 90 95
 Met Gln Ala Lys Asn Leu Phe Pro Asn Thr Tyr Leu Ile Val Gly Val
 100 105 110
 Cys Ser Asp Glu Leu Thr His Asn Phe Lys Gly Phe Thr Val Met Asn
 115 120 125
 Glu Asn Glu Arg Tyr Asp Ala Val Gln His Cys Arg Tyr Val Asp Glu
 130 135 140
 Val Val Arg Asn Ala Pro Trp Thr Leu Thr Pro Glu Phe Leu Ala Glu
 145 150 155 160
 His Arg Ile Asp Phe Val Ala His Asp Asp Ile Pro Tyr Ser Ser Ala
 165 170 175
 Gly Ser Asp Asp Val Tyr Lys His Ile Lys Asp Ala Gly Met Phe Ala
 180 185 190
 Pro Thr Gln Arg Thr Glu Gly Ile Ser Thr Ser Asp Ile Ile Thr Arg
 195 200 205
 Ile Val Arg Asp Tyr Asp Val Tyr Ala Arg Arg Asn Leu Gln Arg Gly
 210 215 220
 Tyr Thr Ala Lys Glu Leu Asn Val Ser Phe Ile Asn Glu Lys Lys Tyr
 225 230 235 240
 His Leu Gln Glu Arg Val Asp Lys Val Lys Lys Lys Val Lys Asp Val

	245		250		255										
Glu	Glu	Lys	Ser	Lys	Glu	Phe	Val	Gln	Lys	Val	Glu	Glu	Lys	Ser	Ile
	260		265		270										
Asp	Leu	Ile	Gln	Lys	Trp	Glu	Glu	Lys	Ser	Arg	Glu	Phe	Ile	Gly	Ser
	275		280		285										
Phe	Leu	Glu	Met	Phe	Gly	Pro	Glu	Gly	Ala	Leu	Lys	His	Met	Leu	Lys
	290		295		300										
Glu	Gly	Lys	Gly	Arg	Met	Leu	Gln	Ala	Ile	Ser	Pro	Lys	Gln	Ser	Pro
305			310		315									320	
Ser	Ser	Ser	Pro	Thr	His	Glu	Arg	Ser	Pro	Ser	Pro	Ser	Phe	Arg	Trp
	325		330		335										
Pro	Phe	Ser	Gly	Lys	Thr	Ser	Pro	Ser	Ser	Ser	Pro	Ala	Ser	Leu	Ser
	340		345		350										
Arg	Cys	Arg	Ala	Val	Thr	Cys	Asp	Ile	Ser	Glu	Asp	Glu	Glu	Asp	
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<210> 280

<211> 2633

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (2018).. (2425)

<400> 280

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 gctggagagg atgaaggact ttggacttgt tggggagtgg atggttgaag aaacgtttgc 180

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tgcccaacct gagttctgta ctaactgggg aggggacaca gggccaggat ctagataaca 420
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caactgtggc cctcaaccag tgtgtgtgtg tgtgtgtgtg tgtgtgtgtg tgtgtgtgtg 540
tgtgtgtgtg ttttctaacc ccagaactta aaaatatctg gagatatctt tgcagaactt 600
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gtccatcacc cggagtgcac tggcagcaac cgiccgggcc gaacccacag cccgtccgc 1980
cttcttggtg tcaggcgatc cccagtcgtt cccaaaa atg cct gtg gac ttc aac 2035

Met Pro Val Asp Phe Asn

1 5

ggg tac tgg aag atg ctg agc aat gag aat ttc gag gag tac ctg cgc 2083
Gly Tyr Trp Lys Met Leu Ser Asn Glu Asn Phe Glu Glu Tyr Leu Arg

10 15 20

gcg ctc gac gtc aac gig gcc tia cgc aaa atc gcc aac ttg ctg aag 2131
Ala Leu Asp Val Asn Val Ala Leu Arg Lys Ile Ala Asn Leu Leu Lys

25 30 35

cca gac aaa gag atc gtg cag gat ggc gac cac atg atc atc cgc acg 2179
Pro Asp Lys Glu Ile Val Gln Asp Gly Asp His Met Ile Ile Arg Thr

40 45 50

ctg agc act ttt cgg aac tat atc atg gac ttc caa gtt ggg aag gag 2227
Leu Ser Thr Phe Arg Asn Tyr Ile Met Asp Phe Gln Val Gly Lys Glu

55 60 65 70

ttt gag gaa gat ctg aca ggc ata gac gac cgc aag tgc atg acc act 2275
Phe Glu Glu Asp Leu Thr Gly Ile Asp Asp Arg Lys Cys Met Thr Thr

75 80 85

gtg agc tgg gat ggt gac aaa ctc cag tgt gtg cag aag gga gag aag 2323
Val Ser Trp Asp Gly Asp Lys Leu Gln Cys Val Gln Lys Gly Glu Lys

90 95 100

gag gga cgt ggc tgg acg cag tgg atc gag ggt gat gaa ctt cac ctg 2371
Glu Gly Arg Gly Trp Thr Gln Trp Ile Glu Gly Asp Glu Leu His Leu

105 110 115

gaa atg aga gct gag ggt gtg atc tgc aag caa gtg ttt aag aaa gta 2419
Glu Met Arg Ala Glu Gly Val Ile Cys Lys Gln Val Phe Lys Lys Val

120 125 130

cac tga gcagcccgaa cagcccgagg agataacctt ggtcttcagg aacaagtggg 2475

His

135

atgggcctgt ggtcaggagc cccctctgcc taacatgggg accgaaacgc ataccacccc 2535
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<210> 281

<211> 135

<212> PRT

<213> Mus musculus

<400> 281

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 20 25 30
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 35 40 45
 His Met Ile Ile Arg Thr Leu Ser Thr Phe Arg Asn Tyr Ile Met Asp
 50 55 60
 Phe Gln Val Gly Lys Glu Phe Glu Glu Asp Leu Thr Gly Ile Asp Asp
 65 70 75 80
 Arg Lys Cys Met Thr Thr Val Ser Trp Asp Gly Asp Lys Leu Gln Cys
 85 90 95
 Val Gln Lys Gly Glu Lys Glu Gly Arg Gly Trp Thr Gln Trp Ile Glu
 100 105 110
 Gly Asp Glu Leu His Leu Glu Met Arg Ala Glu Gly Val Ile Cys Lys
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 Gln Val Phe Lys Lys Val His

130

135

<210> 282

<211> 2308

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (76).. (1368)

<400> 282

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gattttggag gagcc atg gcc ctc agg gtc act agg aac acg aaa att aac 111

Met Ala Leu Arg Val Thr Arg Asn Thr Lys Ile Asn

1

5

10

gca gaa aat aag gcc aag gtc agt atg gca ggc gca atg cgt gtg cct 159

Ala Glu Asn Lys Ala Lys Val Ser Met Ala Gly Ala Met Arg Val Pro

15

20

25

gtg aca gtt act gct gct tcc aag ccc ggg ctg aga ccg aga act gct 207

Val Thr Val Thr Ala Ala Ser Lys Pro Gly Leu Arg Pro Arg Thr Ala

30

35

40

ctt gga gac att ggt aat aaa gtc agc gaa gag cta cag gca aga gtg 255

Leu Gly Asp Ile Gly Asn Lys Val Ser Glu Glu Leu Gln Ala Arg Val

45

50

55

60

cct ctg aaa agg gaa gca aaa acg cta ggt act gga aaa ggt act gtt 303

Pro Leu Lys Arg Glu Ala Lys Thr Leu Gly Thr Gly Lys Gly Thr Val

65

70

75

aaa gcc cta cca aaa cct gta gag aag gtg cct gtg tgt gaa cca gag 351

Lys Ala Leu Pro Lys Pro Val Glu Lys Val Pro Val Cys Glu Pro Glu
 80 85 90
 gtg gaa ctt gct gag cct gag cct gaa cct gaa ctt gaa cat gtt aga 399
 Val Glu Leu Ala Glu Pro Glu Pro Glu Pro Glu Leu Glu His Val Arg
 95 100 105
 gaa gag aag ctt tct cct gaa cct att ttg gtt gat aat ccc tct cca 447
 Glu Glu Lys Leu Ser Pro Glu Pro Ile Leu Val Asp Asn Pro Ser Pro
 110 115 120
 agc ccg atg gaa aca tct gga tgt gcg cct gca gaa gag tat ctg tgt 495
 Ser Pro Met Glu Thr Ser Gly Cys Ala Pro Ala Glu Glu Tyr Leu Cys
 125 130 135 140
 cag gct ttc tct gat gta atc ctt gca gtg agt gac gta gac gca gat 543
 Gln Ala Phe Ser Asp Val Ile Leu Ala Val Ser Asp Val Asp Ala Asp
 145 150 155
 gat ggg gct gac cca aac ctc tgt agt gaa tat gtg aaa gat atc tat 591
 Asp Gly Ala Asp Pro Asn Leu Cys Ser Glu Tyr Val Lys Asp Ile Tyr
 160 165 170
 gct tat ctc cga caa ctc gag gaa gag cag tca gtt aga cca aaa tac 639
 Ala Tyr Leu Arg Gln Leu Glu Glu Glu Gln Ser Val Arg Pro Lys Tyr
 175 180 185
 cta cag ggt cgt gaa gtg act gga aac atg aga gct atc ctc att gac 687
 Leu Gln Gly Arg Glu Val Thr Gly Asn Met Arg Ala Ile Leu Ile Asp
 190 195 200
 tgg cta ata cag gtt cag atg aaa ttt agg ctg ctt cag gag acc atg 735
 Trp Leu Ile Gln Val Gln Met Lys Phe Arg Leu Leu Gln Glu Thr Met
 205 210 215 220
 tac atg act gtg tcc att att gat cgg ttc atg cag aac agt tgt gtg 783
 Tyr Met Thr Val Ser Ile Ile Asp Arg Phe Met Gln Asn Ser Cys Val
 225 230 235

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ccc aag aag atg cta cag ctg gtc ggt gta acg gcc atg ttt att gca 831
Pro Lys Lys Met Leu Gln Leu Val Gly Val Thr Ala Met Phe Ile Ala
      240              245              250
agc aaa tat gag gag atg tac cct cca gaa ata ggt gac ttc gcc ttt 879
Ser Lys Tyr Glu Glu Met Tyr Pro Pro Glu Ile Gly Asp Phe Ala Phe
      255              260              265
gtg act aac aac acg tac act aag cac cag atc aga cag atg gag atg 927
Val Thr Asn Asn Thr Tyr Thr Lys His Gln Ile Arg Gln Met Glu Met
      270              275              280
aag att ctc aga gtt ctg aac ttc agc ctg ggt cgc cct ctg cct ctg 975
Lys Ile Leu Arg Val Leu Asn Phe Ser Leu Gly Arg Pro Leu Pro Leu
285              290              295              300
cac ttc ctc cgt aga gca tct aaa gtc gga gag gtt gac gtc gag cag 1023
His Phe Leu Arg Arg Ala Ser Lys Val Gly Glu Val Asp Val Glu Gln
      305              310              315
cac act ttg gcc aaa tac ctc atg gag ctc tcc atg ctg gac tgc gac 1071
His Thr Leu Ala Lys Tyr Leu Met Glu Leu Ser Met Leu Asp Cys Asp
      320              325              330
atg gtg cat ttt gct cct tct caa att gca gct ggg gct ttc tgc tta 1119
Met Val His Phe Ala Pro Ser Gln Ile Ala Ala Gly Ala Phe Cys Leu
      335              340              345
gcg ctg aaa att ctt gac aac ggt gaa tgg aca cca act ctg cag cac 1167
Ala Leu Lys Ile Leu Asp Asn Gly Glu Trp Thr Pro Thr Leu Gln His
      350              355              360
tac cta tcc tac agt gaa gac tcc ctg ctt cct gtt atg cag cac ctg 1215
Tyr Leu Ser Tyr Ser Glu Asp Ser Leu Leu Pro Val Met Gln His Leu
365              370              375              380
gct aag aat gta gtc atg gtg aac tgt ggc ctc aca aag cac atg act 1263
Ala Lys Asn Val Val Met Val Asn Cys Gly Leu Thr Lys His Met Thr

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385 390 395
 gtc aag aac aag tat gca gca tct aag cat gct aag atc agc acg ctg 1311
 Val Lys Asn Lys Tyr Ala Ala Ser Lys His Ala Lys Ile Ser Thr Leu
 400 405 410
 gca cag ctg aac tgt aca cta gtt cag aat ttg tct aag gcc gtg aca 1359
 Ala Gln Leu Asn Cys Thr Leu Val Gln Asn Leu Ser Lys Ala Val Thr
 415 420 425
 aag gca taa ctccaataga ctgctacatc tgcagatgca gttagccatg 1408
 Lys Ala
 430
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 caaggcgcca ctctgtctt gtaatgccac ctggaaaaga atccgtctc atttgcgtt 2248
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<210> 283

<211> 430

<212> PRT

<213> Mus musculus

<400> 283

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 35 40 45
 Gly Asn Lys Val Ser Glu Glu Leu Gln Ala Arg Val Pro Leu Lys Arg
 50 55 60
 Glu Ala Lys Thr Leu Gly Thr Gly Lys Gly Thr Val Lys Ala Leu Pro
 65 70 75 80
 Lys Pro Val Glu Lys Val Pro Val Cys Glu Pro Glu Val Glu Leu Ala
 85 90 95
 Glu Pro Glu Pro Glu Pro Glu Leu Glu His Val Arg Glu Glu Lys Leu
 100 105 110
 Ser Pro Glu Pro Ile Leu Val Asp Asn Pro Ser Pro Ser Pro Met Glu
 115 120 125
 Thr Ser Gly Cys Ala Pro Ala Glu Glu Tyr Leu Cys Gln Ala Phe Ser
 130 135 140
 Asp Val Ile Leu Ala Val Ser Asp Val Asp Ala Asp Asp Gly Ala Asp
 145 150 155 160
 Pro Asn Leu Cys Ser Glu Tyr Val Lys Asp Ile Tyr Ala Tyr Leu Arg
 165 170 175
 Gln Leu Glu Glu Glu Gln Ser Val Arg Pro Lys Tyr Leu Gln Gly Arg
 180 185 190
 Glu Val Thr Gly Asn Met Arg Ala Ile Leu Ile Asp Trp Leu Ile Gln
 195 200 205

Val Gln Met Lys Phe Arg Leu Leu Gln Glu Thr Met Tyr Met Thr Val
 210 215 220
 Ser Ile Ile Asp Arg Phe Met Gln Asn Ser Cys Val Pro Lys Lys Met
 225 230 235 240
 Leu Gln Leu Val Gly Val Thr Ala Met Phe Ile Ala Ser Lys Tyr Glu
 245 250 255
 Glu Met Tyr Pro Pro Glu Ile Gly Asp Phe Ala Phe Val Thr Asn Asn
 260 265 270
 Thr Tyr Thr Lys His Gln Ile Arg Gln Met Glu Met Lys Ile Leu Arg
 275 280 285
 Val Leu Asn Phe Ser Leu Gly Arg Pro Leu Pro Leu His Phe Leu Arg
 290 295 300
 Arg Ala Ser Lys Val Gly Glu Val Asp Val Glu Gln His Thr Leu Ala
 305 310 315 320
 Lys Tyr Leu Met Glu Leu Ser Met Leu Asp Cys Asp Met Val His Phe
 325 330 335
 Ala Pro Ser Gln Ile Ala Ala Gly Ala Phe Cys Leu Ala Leu Lys Ile
 340 345 350
 Leu Asp Asn Gly Glu Trp Thr Pro Thr Leu Gln His Tyr Leu Ser Tyr
 355 360 365
 Ser Glu Asp Ser Leu Leu Pro Val Met Gln His Leu Ala Lys Asn Val
 370 375 380
 Val Met Val Asn Cys Gly Leu Thr Lys His Met Thr Val Lys Asn Lys
 385 390 395 400
 Tyr Ala Ala Ser Lys His Ala Lys Ile Ser Thr Leu Ala Gln Leu Asn
 405 410 415
 Cys Thr Leu Val Gln Asn Leu Ser Lys Ala Val Thr Lys Ala
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<210> 284

<211> 355

<212> DNA

<213> Mus musculus

<400> 284

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atacaaagag gctcaggctg ccatggaagg actaaatggt caagatttga tggggcagcc 300
aatcagtgig gactggigtg ttgttcgtgg accaccaaag ggcaagagga gagga      355
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<210> 285

<211> 268

<212> DNA

<213> Mus musculus.

<400> 285

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cggggagtac cgcagcggtc cccgcctcat tattttcatt ctigggggtg tgagcctgaa 180
tgagatgcgc tgtgcttacg aagtigacca ggccaacgca aggtgggaag tgctgatatg 240
atccacgcac attctcacce cacagaaa      268
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<210> 286

<211> 2453

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (188).. (1030)

<400> 286

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gccgcctcct ccagaggaga ctacatttg caccaggag ccggagccac gacccaagcc 180
acgagaa atg aag gac tgc agt aat gga tgc tcc gcg ccg ttt gct gga 229
      Met Lys Asp Cys Ser Asn Gly Cys Ser Ala Pro Phe Ala Gly
          1             5             10
gaa aga gga tca gaa gaa gtg gca gag act ttt agg gcc aaa gat ctc 277
Glu Arg Gly Ser Glu Glu Val Ala Glu Thr Phe Arg Ala Lys Asp Leu
    15             20             25             30
atc atc aca cca gcc act gtc tta aaa gag aag ccg gac ccg gat tcg 325
Ile Ile Thr Pro Ala Thr Val Leu Lys Glu Lys Pro Asp Pro Asp Ser
          35             40             45
ctg gtc ttt gga gct acg ttt act gac cac atg ctg acg gtg gag tgg 373
Leu Val Phe Gly Ala Thr Phe Thr Asp His Met Leu Thr Val Glu Trp
          50             55             60
tcc tct gcg tct gga tgg gag aaa cct cac att aag cct ttt gga aac 421
Ser Ser Ala Ser Gly Trp Glu Lys Pro His Ile Lys Pro Phe Gly Asn
          65             70             75
ttg ccc ata cat ccc gct gcc tct gtt ttg cac tac gct gtg gaa ctg 469
Leu Pro Ile His Pro Ala Ala Ser Val Leu His Tyr Ala Val Glu Leu
          80             85             90
ttt gaa ggc ttg aaa gcc ttt cgg gga gtt gat aac aag atc cga ttg 517
Phe Glu Gly Leu Lys Ala Phe Arg Gly Val Asp Asn Lys Ile Arg Leu

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95	100	105	110	
ttc cgg ccg gac ctc aac atg gat aga atg tgc cga tct gct gtg agg	565			
Phe Arg Pro Asp Leu Asn Met Asp Arg Met Cys Arg Ser Ala Val Arg				
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acc acg ctg ccg atg ttt gac aag gag gag ctc cta aag tgt att ctt	613			
Thr Thr Leu Pro Met Phe Asp Lys Glu Glu Leu Leu Lys Cys Ile Leu				
	130	135	140	
cag ctt cta cag atc gac caa gaa tgg gtt ccc tac tcc acc tct gcc	661			
Gln Leu Leu Gln Ile Asp Gln Glu Trp Val Pro Tyr Ser Thr Ser Ala				
	145	150	155	
agc ctc tac atc cgc ccc aca ttt atc gga act gag cca tct ctt ggc	709			
Ser Leu Tyr Ile Arg Pro Thr Phe Ile Gly Thr Glu Pro Ser Leu Gly				
	160	165	170	
gtc aag aag cct tcc aaa gcc cta ctc ttt gtg atc ctg agc ccc gtg	757			
Val Lys Lys Pro Ser Lys Ala Leu Leu Phe Val Ile Leu Ser Pro Val				
	175	180	185	190
gga cct tat ttt tct agt gga tct ttt act ccg gtg tcc ctg tgg gcc	805			
Gly Pro Tyr Phe Ser Ser Gly Ser Phe Thr Pro Val Ser Leu Trp Ala				
	195	200	205	
aat cca aag tac atc aga gcc tgg aaa ggt ggg act gga gac tgc aag	853			
Asn Pro Lys Tyr Ile Arg Ala Trp Lys Gly Gly Thr Gly Asp Cys Lys				
	210	215	220	
atg ggc ggc aat tat gga gcc tcc ctt ctg gca cag tgc gag gcc gtg	901			
Met Gly Gly Asn Tyr Gly Ala Ser Leu Leu Ala Gln Cys Glu Ala Val				
	225	230	235	
gag aat ggc tgt cag cag gtc ctg tgg ctg tac ggc aag gac aac cag	949			
Glu Asn Gly Cys Gln Gln Val Leu Trp Leu Tyr Gly Lys Asp Asn Gln				
	240	245	250	
ata act gaa gta ggc aca atg aat ctt ttc ctc tac tgg ata aac gaa	997			

Ile Thr Glu Val Gly Thr Met Asn Leu Phe Leu Tyr Trp Ile Asn Glu
 255 260 265 270
 gac gga gaa gag gag ctg caa cgc ccc cac tag atggcatcat tctcccggga 1050
 Asp Gly Glu Glu Glu Leu Gln Arg Pro His
 275 280
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<210> 287

<211> 280

<212> PRT

<213> Mus musculus

<400> 287

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 Phe Gly Ala Thr Phe Thr Asp His Met Leu Thr Val Glu Trp Ser Ser
 50 55 60
 Ala Ser Gly Trp Glu Lys Pro His Ile Lys Pro Phe Gly Asn Leu Pro
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 Ile His Pro Ala Ala Ser Val Leu His Tyr Ala Val Glu Leu Phe Glu
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 Gly Leu Lys Ala Phe Arg Gly Val Asp Asn Lys Ile Arg Leu Phe Arg
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 Pro Asp Leu Asn Met Asp Arg Met Cys Arg Ser Ala Val Arg Thr Thr
 115 120 125
 Leu Pro Met Phe Asp Lys Glu Glu Leu Leu Lys Cys Ile Leu Gln Leu
 130 135 140
 Leu Gln Ile Asp Gln Glu Trp Val Pro Tyr Ser Thr Ser Ala Ser Leu
 145 150 155 160
 Tyr Ile Arg Pro Thr Phe Ile Gly Thr Glu Pro Ser Leu Gly Val Lys
 165 170 175

Lys Pro Ser Lys Ala Leu Leu Phe Val Ile Leu Ser Pro Val Gly Pro

180

185

190

Tyr Phe Ser Ser Gly Ser Phe Thr Pro Val Ser Leu Trp Ala Asn Pro

195

200

205

Lys Tyr Ile Arg Ala Trp Lys Gly Gly Thr Gly Asp Cys Lys Met Gly

210

215

220

Gly Asn Tyr Gly Ala Ser Leu Leu Ala Gln Cys Glu Ala Val Glu Asn

225

230

235

240

Gly Cys Gln Gln Val Leu Trp Leu Tyr Gly Lys Asp Asn Gln Ile Thr

245

250

255

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265

270

Glu Glu Glu Leu Gln Arg Pro His

275

280

<210> 288

<211> 2188

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (57).. (2024)

<400> 288

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Met

1

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Ala Ser Thr Asp Tyr Ser Thr Tyr Ser Gln Ala Ala Ala Gln Gln Gly
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 Tyr Ser Ala Tyr Thr Ala Gln Pro Thr Gln Gly Tyr Ala Gln Thr Thr
 20 25 30
 cag gca tat ggg caa caa agc tat gga acc tat gga cag cct act gat 203
 Gln Ala Tyr Gly Gln Gln Ser Tyr Gly Thr Tyr Gly Gln Pro Thr Asp
 35 40 45
 gtc agc tat act cag gct cag acc act gcc acc tac ggg cag act gca 251
 Val Ser Tyr Thr Gln Ala Gln Thr Thr Ala Thr Tyr Gly Gln Thr Ala
 50 55 60 65
 tat gca act tct tac gga cag cct ccc act ggt tat agt act cca act 299
 Tyr Ala Thr Ser Tyr Gly Gln Pro Pro Thr Gly Tyr Ser Thr Pro Thr
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 gcc ccc cag gcg tac agc cag cct gtg cag gga tat ggc act ggg gct 347
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 Tyr Asp Ser Thr Thr Ala Thr Val Thr Thr Thr Gln Ala Ser Tyr Ala
 100 105 110
 gct cag tca gca tat ggc acc cag cct gcc tac ccc acc tat ggc cag 443
 Ala Gln Ser Ala Tyr Gly Thr Gln Pro Ala Tyr Pro Thr Tyr Gly Gln
 115 120 125
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 Gln Pro Thr Ala Thr Ala Pro Thr Arg Pro Gln Asp Gly Asn Lys Pro
 130 135 140 145
 gct gag act agc caa cct caa tct agc aca ggg ggt tat aac caa ccc 539
 Ala Glu Thr Ser Gln Pro Gln Ser Ser Thr Gly Gly Tyr Asn Gln Pro
 150 155 160

agc cta gga tat gga cag agt aac tac agc tat ccc cag gta cct ggg 587
 Ser Leu Gly Tyr Gly Gln Ser Asn Tyr Ser Tyr Pro Gln Val Pro Gly
 165 170 175
 agc tac cca atg cag cca gtc acc gca cct cca tct tat cct cct acc 635
 Ser Tyr Pro Met Gln Pro Val Thr Ala Pro Pro Ser Tyr Pro Pro Thr
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 agc tac tcc tct tca cag ccg act agt tac gat cag agc agt tac tct 683
 Ser Tyr Ser Ser Ser Gln Pro Thr Ser Tyr Asp Gln Ser Ser Tyr Ser
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 Gln Gln Asn Thr Tyr Gly Gln Pro Ser Ser Tyr Gly Gln Gln Ser Ser
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 Tyr Gly Gln Gln Ser Ser Tyr Gly Gln Gln Pro Pro Thr Ser Tyr Pro
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 cct cag act gga tcc tac agc cag gct cca agt caa tat agc caa cag 827
 Pro Gln Thr Gly Ser Tyr Ser Gln Ala Pro Ser Gln Tyr Ser Gln Gln
 245 250 255
 agc agc agc tac ggg cag cag agt tca ttc cga cag gac cac ccc agt 875
 Ser Ser Ser Tyr Gly Gln Gln Ser Ser Phe Arg Gln Asp His Pro Ser
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 agc atg ggt gtt tat ggg cag gag tct gga gga ttt tcc gga cca gga 923
 Ser Met Gly Val Tyr Gly Gln Glu Ser Gly Gly Phe Ser Gly Pro Gly
 275 280 285
 gag aac cgg agc ttg agt ggc cct gat aac cgg ggc agg gga aga ggg 971
 Glu Asn Arg Ser Leu Ser Gly Pro Asp Asn Arg Gly Arg Gly Arg Gly
 290 295 300 305
 gga ttt gat cgt gga ggc atg agc aga ggt ggg cgg gga gga gga cgc 1019
 Gly Phe Asp Arg Gly Gly Met Ser Arg Gly Gly Arg Gly Gly Arg

310	315	320	
ggt gga ctg ggc gct gga gag cga ggt ggc ttc aat aag cct ggt gga	1067		
Gly Gly Leu Gly Ala Gly Glu Arg Gly Gly Phe Asn Lys Pro Gly Gly			
325	330	335	
ccc atg gat gaa gga cca gat ctt gat cta ggc ctt cct ata gat ccc	1115		
Pro Met Asp Glu Gly Pro Asp Leu Asp Leu Gly Leu Pro Ile Asp Pro			
340	345	350	
gat gaa gac tct gac aac agt gca att tat gtg caa gga tta aat gac	1163		
Asp Glu Asp Ser Asp Asn Ser Ala Ile Tyr Val Gln Gly Leu Asn Asp			
355	360	365	
aat gtg act ctg gat gat ctg gca gac ttc ttt aag cag tgt ggg gtt	1211		
Asn Val Thr Leu Asp Asp Leu Ala Asp Phe Phe Lys Gln Cys Gly Val			
370	375	380	385
gtc aag atg aac aag aga act gga caa ccc atg atc cat atc tac ctg	1259		
Val Lys Met Asn Lys Arg Thr Gly Gln Pro Met Ile His Ile Tyr Leu			
390	395	400	
gat aag gag aca gga aag cct aaa ggg gac gcc aca gtg tcc tat gaa	1307		
Asp Lys Glu Thr Gly Lys Pro Lys Gly Asp Ala Thr Val Ser Tyr Glu			
405	410	415	
gat cca cca act gca aag gct gcc gtg gaa tgg ttt gat ggg aaa gat	1355		
Asp Pro Pro Thr Ala Lys Ala Ala Val Glu Trp Phe Asp Gly Lys Asp			
420	425	430	
ttt caa gga agc aaa ctt aaa gtg tct ctt gcc cga aag aag cct cca	1403		
Phe Gln Gly Ser Lys Leu Lys Val Ser Leu Ala Arg Lys Lys Pro Pro			
435	440	445	
atg aac agc atg cgg gga ggc atg cca cct cgt gag ggc agg ggt atg	1451		
Met Asn Ser Met Arg Gly Gly Met Pro Pro Arg Glu Gly Arg Gly Met			
450	455	460	465
cca cca cca ctt cgt gga ggt cct ggt ggc cca gga ggc cct gga gga	1499		

Pro Pro Pro Leu Arg Gly Gly Pro Gly Gly Pro Gly Gly Pro Gly Gly
 470 475 480
 ccc atg ggt cgc atg gga ggc cgt gga gga gac aga ggg ggc ttc cct 1547
 Pro Met Gly Arg Met Gly Gly Arg Gly Gly Asp Arg Gly Gly Phe Pro
 485 490 495
 cca aga ggg ccc cga ggc tcc aga gga aac ccc tct gga gga gga aat 1595
 Pro Arg Gly Pro Arg Gly Ser Arg Gly Asn Pro Ser Gly Gly Gly Asn
 500 505 510
 gtc cag cac cga gct gga gac tgg cag tgt ccc aat ccg ggc tgt gga 1643
 Val Gln His Arg Ala Gly Asp Trp Gln Cys Pro Asn Pro Gly Cys Gly
 515 520 525
 aac cag aac ttc gct tgg aga aca gaa tgc aac cag tgt aag gcc cct 1691
 Asn Gln Asn Phe Ala Trp Arg Thr Glu Cys Asn Gln Cys Lys Ala Pro
 530 535 540 545
 aag ccc gag ggc ttc ctc ccg cca ccc ttt cca cct ccg ggt ggt gat 1739
 Lys Pro Glu Gly Phe Leu Pro Pro Pro Phe Pro Pro Pro Gly Gly Asp
 550 555 560
 cgt gga cga ggt ggc cct ggt ggc atg cga gga gga aga gga gga ctc 1787
 Arg Gly Arg Gly Gly Pro Gly Gly Met Arg Gly Gly Arg Gly Gly Leu
 565 570 575
 atg gac cgt ggt ggt cct gga gga atg ttc aga ggt ggc aga ggt gga 1835
 Met Asp Arg Gly Gly Pro Gly Gly Met Phe Arg Gly Gly Arg Gly Gly
 580 585 590
 gac aga gga ggc ttc cga ggt ggc cgt gga atg gac cga ggt ggc ttt 1883
 Asp Arg Gly Gly Phe Arg Gly Gly Arg Gly Met Asp Arg Gly Gly Phe
 595 600 605
 ggt gga gga aga cga ggt ggt cct ggg ggg cct cct gga cct tta atg 1931
 Gly Gly Gly Arg Arg Gly Gly Pro Gly Gly Pro Pro Gly Pro Leu Met
 610 615 620 625

gaa cag atg gga gga aga aga ggc gga cgt gga gga cct ggg aaa atg 1979
 Glu Gln Met Gly Gly Arg Arg Gly Gly Arg Gly Gly Pro Gly Lys Met
 630 635 640
 gat aaa ggc gag cac cgt cag gaa cgc aga gac cgg ccc tac tag 2024
 Asp Lys Gly Glu His Arg Gln Glu Arg Arg Asp Arg Pro Tyr
 645 650 655
 agacctgcag agctgcatig agtaccagat ttatTTTTTTT aaccaggaaa tgTTTTTaaat 2084
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 agtatttttc accatttgtg gagaaacatt aaaacaagtt aaat 2188

<210> 289

<211> 655

<212> PRT

<213> Mus musculus

<400> 289

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 35 40 45
 Asp Val Ser Tyr Thr Gln Ala Gln Thr Thr Ala Thr Tyr Gly Gln Thr
 50 55 60
 Ala Tyr Ala Thr Ser Tyr Gly Gln Pro Pro Thr Gly Tyr Ser Thr Pro
 65 70 75 80
 Thr Ala Pro Gln Ala Tyr Ser Gln Pro Val Gln Gly Tyr Gly Thr Gly
 85 90 95
 Ala Tyr Asp Ser Thr Thr Ala Thr Val Thr Thr Thr Gln Ala Ser Tyr

100	105	110
Ala Ala Gln Ser Ala Tyr Gly Thr Gln Pro Ala Tyr Pro Thr Tyr Gly		
115	120	125
Gln Gln Pro Thr Ala Thr Ala Pro Thr Arg Pro Gln Asp Gly Asn Lys		
130	135	140
Pro Ala Glu Thr Ser Gln Pro Gln Ser Ser Thr Gly Gly Tyr Asn Gln		
145	150	155
Pro Ser Leu Gly Tyr Gly Gln Ser Asn Tyr Ser Tyr Pro Gln Val Pro		
165	170	175
Gly Ser Tyr Pro Met Gln Pro Val Thr Ala Pro Pro Ser Tyr Pro Pro		
180	185	190
Thr Ser Tyr Ser Ser Ser Gln Pro Thr Ser Tyr Asp Gln Ser Ser Tyr		
195	200	205
Ser Gln Gln Asn Thr Tyr Gly Gln Pro Ser Ser Tyr Gly Gln Gln Ser		
210	215	220
Ser Tyr Gly Gln Gln Ser Ser Tyr Gly Gln Gln Pro Pro Thr Ser Tyr		
225	230	235
Pro Pro Gln Thr Gly Ser Tyr Ser Gln Ala Pro Ser Gln Tyr Ser Gln		
245	250	255
Gln Ser Ser Ser Tyr Gly Gln Gln Ser Ser Phe Arg Gln Asp His Pro		
260	265	270
Ser Ser Met Gly Val Tyr Gly Gln Glu Ser Gly Gly Phe Ser Gly Pro		
275	280	285
Gly Glu Asn Arg Ser Leu Ser Gly Pro Asp Asn Arg Gly Arg Gly Arg		
290	295	300
Gly Gly Phe Asp Arg Gly Gly Met Ser Arg Gly Gly Arg Gly Gly Gly		
305	310	315
Arg Gly Gly Leu Gly Ala Gly Glu Arg Gly Gly Phe Asn Lys Pro Gly		
325	330	335

Gly Pro Met Asp Glu Gly Pro Asp Leu Asp Leu Gly Leu Pro Ile Asp
 340 345 350
 Pro Asp Glu Asp Ser Asp Asn Ser Ala Ile Tyr Val Gln Gly Leu Asn
 355 360 365
 Asp Asn Val Thr Leu Asp Asp Leu Ala Asp Phe Phe Lys Gln Cys Gly
 370 375 380
 Val Val Lys Met Asn Lys Arg Thr Gly Gln Pro Met Ile His Ile Tyr
 385 390 395 400
 Leu Asp Lys Glu Thr Gly Lys Pro Lys Gly Asp Ala Thr Val Ser Tyr
 405 410 415
 Glu Asp Pro Pro Thr Ala Lys Ala Ala Val Glu Trp Phe Asp Gly Lys
 420 425 430
 Asp Phe Gln Gly Ser Lys Leu Lys Val Ser Leu Ala Arg Lys Lys Pro
 435 440 445
 Pro Met Asn Ser Met Arg Gly Gly Met Pro Pro Arg Glu Gly Arg Gly
 450 455 460
 Met Pro Pro Pro Leu Arg Gly Gly Pro Gly Gly Pro Gly Gly Pro Gly
 465 470 475 480
 Gly Pro Met Gly Arg Met Gly Gly Arg Gly Gly Asp Arg Gly Gly Phe
 485 490 495
 Pro Pro Arg Gly Pro Arg Gly Ser Arg Gly Asn Pro Ser Gly Gly Gly
 500 505 510
 Asn Val Gln His Arg Ala Gly Asp Trp Gln Cys Pro Asn Pro Gly Cys
 515 520 525
 Gly Asn Gln Asn Phe Ala Trp Arg Thr Glu Cys Asn Gln Cys Lys Ala
 530 535 540
 Pro Lys Pro Glu Gly Phe Leu Pro Pro Pro Phe Pro Pro Pro Gly Gly
 545 550 555 560
 Asp Arg Gly Arg Gly Gly Pro Gly Gly Met Arg Gly Gly Arg Gly Gly

	565	570	575
Leu Met Asp Arg Gly Gly Pro Gly Gly Met Phe Arg Gly Gly Arg Gly			
	580	585	590
Gly Asp Arg Gly Gly Phe Arg Gly Gly Arg Gly Met Asp Arg Gly Gly			
	595	600	605
Phe Gly Gly Gly Arg Arg Gly Gly Pro Gly Gly Pro Pro Gly Pro Leu			
	610	615	620
Met Glu Gln Met Gly Gly Arg Arg Gly Gly Arg Gly Gly Pro Gly Lys			
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Met Asp Lys Gly Glu His Arg Gln Glu Arg Arg Asp Arg Pro Tyr			
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<210> 290

<211> 3295

<212> DNA

<213> Mus musculus

<400> 290

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 ttactgcaca cagggtggcaa aggggtcgac ctggctctca actcactggc agaagagaag 240
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 aaggcccagg tggaagatgc ctccgctac atggctcagg ggaaacactt ggcaaagtcc 540
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 cagctgtcag tgtgaagaag tgtctggact gtgtcatttt tacaccaacc tggtaaaaat 3240
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<210> 291

<211> 1127

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (50).. (1033)

<400> 291

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Met Lys Pro

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ggt ttc cgc ccc cgt ggg ggt ggc ttt ggt ggc aga ggc ggc ttt ggt 106
Gly Phe Arg Pro Arg Gly Gly Gly Phe Gly Gly Arg Gly Gly Phe Gly
      5              10              15

gac aga ggc ggt aga gga ggt gga aga gga ggc cga gga ggc ttt ggc 154
Asp Arg Gly Gly Arg Gly Gly Gly Arg Gly Gly Arg Gly Gly Phe Gly
      20              25              30              35

ggt gga cga gga ggc ttt ggc ggt gga ggt cga ggt cga ggc gga ggg 202
Gly Gly Arg Gly Gly Phe Gly Gly Gly Gly Arg Gly Arg Gly Gly Gly
              40              45              50

ggt ggt ggc ttc agg gga cga gga ggt ggc ggt gtc cga ggt ggg ggc 250
Gly Gly Gly Phe Arg Gly Arg Gly Gly Gly Gly Val Arg Gly Gly Gly
              55              60              65

ttc cag tct ggg ggc aac cgg ggt cga ggt ggt ggc cgg gga ggc aag 298
Phe Gln Ser Gly Gly Asn Arg Gly Arg Gly Gly Gly Arg Gly Gly Lys
              70              75              80

aga gga aac cag tca ggg aag aat gtg atg gtg gag ccg cat cgt cat 346
Arg Gly Asn Gln Ser Gly Lys Asn Val Met Val Glu Pro His Arg His
              85              90              95

gaa ggt gtc ttt atc tgt cgc gga aag gag gat gcc ctt ttc aca aag 394
Glu Gly Val Phe Ile Cys Arg Gly Lys Glu Asp Ala Leu Phe Thr Lys
      100              105              110              115

aat ctg gtc cct gga gag tct gtg tat gga gag aag aga gtc tct att 442
Asn Leu Val Pro Gly Glu Ser Val Tyr Gly Glu Lys Arg Val Ser Ile
              120              125              130

tca gaa gga gat gac aca att gag tac aga gcc tgg aac ccc ttc cgc 490
Ser Glu Gly Asp Asp Thr Ile Glu Tyr Arg Ala Trp Asn Pro Phe Arg
              135              140              145

tcc aag ctg gca gca gct atc ctg ggc ggc gta gac cag atc cac atc 538
Ser Lys Leu Ala Ala Ala Ile Leu Gly Gly Val Asp Gln Ile His Ile

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Lys Pro Gly Ala Lys Val Leu Tyr Leu Gly Ala Ala Ser Gly Thr Thr			
165	170	175	
gtc tcc cac gtc tct gat att gtc ggc ccg gat ggt ctg gtc tac gca	634		
Val Ser His Val Ser Asp Ile Val Gly Pro Asp Gly Leu Val Tyr Ala			
180	185	190	195
gtt gag ttc tcc cac cgc tct ggc cgt gac ctc atc aac ttg gcc aag	682		
Val Glu Phe Ser His Arg Ser Gly Arg Asp Leu Ile Asn Leu Ala Lys			
200	205	210	
aag agg act aac att att cct gta att gaa gat gct cga cac cca cac	730		
Lys Arg Thr Asn Ile Ile Pro Val Ile Glu Asp Ala Arg His Pro His			
215	220	225	
aaa tac cgc atg ctt atc gca atg gtg gat gtc atc ttt gcc gat gtg	778		
Lys Tyr Arg Met Leu Ile Ala Met Val Asp Val Ile Phe Ala Asp Val			
230	235	240	
gcc cag cca gac caa acc cga att gtg gcc ctg aac gcc cac acc ttc	826		
Ala Gln Pro Asp Gln Thr Arg Ile Val Ala Leu Asn Ala His Thr Phe			
245	250	255	
ctg cgg aat gga gga cac ttt gtg att tcc att aag gcc aac tgc att	874		
Leu Arg Asn Gly Gly His Phe Val Ile Ser Ile Lys Ala Asn Cys Ile			
260	265	270	275
gac tcc act gcg tca gca gag gct gtg ttt gca tct gaa gtg aag aag	922		
Asp Ser Thr Ala Ser Ala Glu Ala Val Phe Ala Ser Glu Val Lys Lys			
280	285	290	
atg cag cag gag aac atg aag ccg cag gag cag ctg acg cta gag cct	970		
Met Gln Gln Glu Asn Met Lys Pro Gln Glu Gln Leu Thr Leu Glu Pro			
295	300	305	
tat gag cga gac cac gcc gtg gtt gtc ggt gtg tac agg cca cct ccc	1018		

Tyr Glu Arg Asp His Ala Val Val Val Gly Val Tyr Arg Pro Pro Pro
 310 315 320
 aag gtg aag aac tga aactcagagc tgtctggatt gaagagaatgt gtgttggtac 1073
 Lys Val Lys Asn
 325
 tgttgcacgt gttgcttgtg attttttggg ggcgggggag ttgttttgtt ttic 1127

<210> 292

<211> 327

<212> PRT

<213> Mus musculus

<400> 292

Met Lys Pro Gly Phe Arg Pro Arg Gly Gly Gly Phe Gly Gly Arg Gly
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 Gly Phe Gly Gly Gly Arg Gly Gly Phe Gly Gly Gly Gly Arg Gly Arg
 35 40 45
 Gly Gly Gly Gly Gly Gly Phe Arg Gly Arg Gly Gly Gly Gly Val Arg
 50 55 60
 Gly Gly Gly Phe Gln Ser Gly Gly Asn Arg Gly Arg Gly Gly Gly Arg
 65 70 75 80
 Gly Gly Lys Arg Gly Asn Gln Ser Gly Lys Asn Val Met Val Glu Pro
 85 90 95
 His Arg His Glu Gly Val Phe Ile Cys Arg Gly Lys Glu Asp Ala Leu
 100 105 110
 Phe Thr Lys Asn Leu Val Pro Gly Glu Ser Val Tyr Gly Glu Lys Arg
 115 120 125

Val Ser Ile Ser Glu Gly Asp Asp Thr Ile Glu Tyr Arg Ala Trp Asn
 130 135 140
 Pro Phe Arg Ser Lys Leu Ala Ala Ala Ile Leu Gly Gly Val Asp Gln
 145 150 155 160
 Ile His Ile Lys Pro Gly Ala Lys Val Leu Tyr Leu Gly Ala Ala Ser
 165 170 175
 Gly Thr Thr Val Ser His Val Ser Asp Ile Val Gly Pro Asp Gly Leu
 180 185 190
 Val Tyr Ala Val Glu Phe Ser His Arg Ser Gly Arg Asp Leu Ile Asn
 195 200 205
 Leu Ala Lys Lys Arg Thr Asn Ile Ile Pro Val Ile Glu Asp Ala Arg
 210 215 220
 His Pro His Lys Tyr Arg Met Leu Ile Ala Met Val Asp Val Ile Phe
 225 230 235 240
 Ala Asp Val Ala Gln Pro Asp Gln Thr Arg Ile Val Ala Leu Asn Ala
 245 250 255
 His Thr Phe Leu Arg Asn Gly Gly His Phe Val Ile Ser Ile Lys Ala
 260 265 270
 Asn Cys Ile Asp Ser Thr Ala Ser Ala Glu Ala Val Phe Ala Ser Glu
 275 280 285
 Val Lys Lys Met Gln Gln Glu Asn Met Lys Pro Gln Glu Gln Leu Thr
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 Leu Glu Pro Tyr Glu Arg Asp His Ala Val Val Val Gly Val Tyr Arg
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 Pro Pro Pro Lys Val Lys Asn
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<210> 293

<211> 2060

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (14).. (1633)

<400> 293

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ggg gct ttc tac aag gga ttt atc aaa gat gtc cac gaa gac tcc ctc      97
Gly Ala Phe Tyr Lys Gly Phe Ile Lys Asp Val His Glu Asp Ser Leu
              15              20              25
aca gtt gtt ttt gaa aat aat tgg caa cca gaa cgc cag gtt ccg ttt      145
Thr Val Val Phe Glu Asn Asn Trp Gln Pro Glu Arg Gln Val Pro Phe
              30              35              40
aat gaa gtg cga tta cca cca cca cct gat ata aaa aaa gaa att agt      193
Asn Glu Val Arg Leu Pro Pro Pro Pro Asp Ile Lys Lys Glu Ile Ser
              45              50              55              60
gaa gga gat gaa gta gag gta tat tca aga gca aat gac caa gag cca      241
Glu Gly Asp Glu Val Glu Val Tyr Ser Arg Ala Asn Asp Gln Glu Pro
              65              70              75
tgt gga tgg tgg ctg gct aaa gtt cgg atg atg aaa ggc gag ttt tat      289
Cys Gly Trp Trp Leu Ala Lys Val Arg Met Met Lys Gly Glu Phe Tyr
              80              85              90
gtc att gaa tat gct gct tgt gat gcc act tac aat gaa ata gtc aca      337
Val Ile Glu Tyr Ala Ala Cys Asp Ala Thr Tyr Asn Glu Ile Val Thr
              95              100              105

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    ttt gaa cga ctt cgg cct gtc aat caa aat aaa act gtc aaa aaa aat   385
Phe Glu Arg Leu Arg Pro Val Asn Gln Asn Lys Thr Val Lys Lys Asn
      110              115              120
    acc ttc ttt aag tgc aca gtg gat gtt cct gag gac ctg aga gaa gcg   433
Thr Phe Phe Lys Cys Thr Val Asp Val Pro Glu Asp Leu Arg Glu Ala
    125              130              135              140
    tgt gct aat gaa aat gcc cat aaa gat ttt aag aaa gca gta gga gca   481
Cys Ala Asn Glu Asn Ala His Lys Asp Phe Lys Lys Ala Val Gly Ala
              145              150              155
    tgc aga atc ttt tat cat cct gaa act acc cag cta atg ata ctg tcg   529
Cys Arg Ile Phe Tyr His Pro Glu Thr Thr Gln Leu Met Ile Leu Ser
              160              165              170
    gcc agt gaa gca act gtg aag aga gta aat atc tta agt gat atg cat   577
Ala Ser Glu Ala Thr Val Lys Arg Val Asn Ile Leu Ser Asp Met His
              175              180              185
    ttg aga agt att cgg acg aag ttg atg ctt atg tcc aga aat gaa gag   625
Leu Arg Ser Ile Arg Thr Lys Leu Met Leu Met Ser Arg Asn Glu Glu
              190              195              200
    gcc act aag cat tta gaa tgc aca aaa caa ctt gca gca gct ttt cat   673
Ala Thr Lys His Leu Glu Cys Thr Lys Gln Leu Ala Ala Ala Phe His
    205              210              215              220
    gaa gaa ttt gtt gtg aga gaa gat tta atg ggc ctg gcg ata gga acg   721
Glu Glu Phe Val Val Arg Glu Asp Leu Met Gly Leu Ala Ile Gly Thr
              225              230              235
    cat ggc agt aac ata cag caa gct agg aag gtt cct gga gtt act gcc   769
His Gly Ser Asn Ile Gln Gln Ala Arg Lys Val Pro Gly Val Thr Ala
              240              245              250
    att gag tta gat gaa gac acc gga acg ttt aga atc tat gga gag agt   817
Ile Glu Leu Asp Glu Asp Thr Gly Thr Phe Arg Ile Tyr Gly Glu Ser

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255	260	265	
gct gag gct gta aaa aaa gct aga ggt ttc ttg gaa ttt gtg gaa gat	865		
Ala Glu Ala Val Lys Lys Ala Arg Gly Phe Leu Glu Phe Val Glu Asp			
270	275	280	
ttt att caa gtt ccc agg aat ctt gtt gga aaa gta att gga aaa aat	913		
Phe Ile Gln Val Pro Arg Asn Leu Val Gly Lys Val Ile Gly Lys Asn			
285	290	295	300
ggc aaa gtt att caa gaa ata gtg gat aaa tct ggt gtg gtt cga gta	961		
Gly Lys Val Ile Gln Glu Ile Val Asp Lys Ser Gly Val Val Arg Val			
305	310	315	
aga att gaa gga gac aat gaa aat aaa cta cct aga gaa gac gga atg	1009		
Arg Ile Glu Gly Asp Asn Glu Asn Lys Leu Pro Arg Glu Asp Gly Met			
320	325	330	
gtt cca ttt gta ttt gtt ggc act aaa gaa agc att ggg aat gtg caa	1057		
Val Pro Phe Val Phe Val Gly Thr Lys Glu Ser Ile Gly Asn Val Gln			
335	340	345	
gtt ctt cta gag tat cac atc gct tac tta aag gaa gtg gaa caa cta	1105		
Val Leu Leu Glu Tyr His Ile Ala Tyr Leu Lys Glu Val Glu Gln Leu			
350	355	360	
aga atg gaa cgt ctg cag att gat gag cag ctg cga cag att ggt tct	1153		
Arg Met Glu Arg Leu Gln Ile Asp Glu Gln Leu Arg Gln Ile Gly Ser			
365	370	375	380
agg tct tat agt gga aga ggc aga ggt cgt cgg ggc cct aat tac acc	1201		
Arg Ser Tyr Ser Gly Arg Gly Arg Gly Arg Arg Gly Pro Asn Tyr Thr			
385	390	395	
tcc ggt tat ggt aca aat tct gag ctg tct aac ccc tcc gaa aca gaa	1249		
Ser Gly Tyr Gly Thr Asn Ser Glu Leu Ser Asn Pro Ser Glu Thr Glu			
400	405	410	
tct gag cgt aaa gat gag ctg agt gat tgg tca ttg gca gga gaa gat	1297		

Ser Glu Arg Lys Asp Glu Leu Ser Asp Trp Ser Leu Ala Gly Glu Asp
 415 420 425
 gat cga gag act cga cat cag cga gac agc agg aga cgc cca gga gga 1345
 Asp Arg Glu Thr Arg His Gln Arg Asp Ser Arg Arg Arg Pro Gly Gly
 430 435 440
 aga ggc aga agt gtt tct ggg gga cga ggt cgt ggt gga cca cgt ggt 1393
 Arg Gly Arg Ser Val Ser Gly Gly Arg Gly Arg Gly Gly Pro Arg Gly
 445 450 455 460
 ggc aaa tcc tcc atc agt tct gtg ctg aaa gat cca gac agc aat cca 1441
 Gly Lys Ser Ser Ile Ser Ser Val Leu Lys Asp Pro Asp Ser Asn Pro
 465 470 475
 tac agc tta ctt gat aat aca gaa tcc gat cag act gca gac act gac 1489
 Tyr Ser Leu Leu Asp Asn Thr Glu Ser Asp Gln Thr Ala Asp Thr Asp
 480 485 490
 gcc agc gaa tct cac cac agt act aac cgt cgt agg cgg tct cgt aga 1537
 Ala Ser Glu Ser His His Ser Thr Asn Arg Arg Arg Arg Ser Arg Arg
 495 500 505
 cgg agg act gat gaa gat gct gtt ctg atg gat gga ctg act gaa tct 1585
 Arg Arg Thr Asp Glu Asp Ala Val Leu Met Asp Gly Leu Thr Glu Ser
 510 515 520
 gat aca gcc tca gtt aat gag aat ggg cta ggc aaa aga tgt gat tga 1633
 Asp Thr Ala Ser Val Asn Glu Asn Gly Leu Gly Lys Arg Cys Asp
 525 530 535 540
 agagcatggt ccttcagaaa aggcaataaa tgggtccaact agcgcttctg gcgatgaaat 1693
 tcctaagcta ccgcgtactc tgggagaaga aaagactaag accttaaaag aagacagcac 1753
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 ccagtccttac atgcacattt cagttcctcc atttggaatt cagaaagggg agggatcctg 1933
 aagaaatcat atgttaaaca tactttgaca cctactgtgt taaaaatata tcatcagatg 1993

tgcccttgaga atagtatatg taacattaaa aaaagttgct ggctaaaaaa aaaaaaaaaa 2053
 aaaaaaa 2060

<210> 294

<211> 539

<212> PRT

<213> Mus musculus

<400> 294

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 35 40 45
 Leu Pro Pro Pro Pro Asp Ile Lys Lys Glu Ile Ser Glu Gly Asp Glu
 50 55 60
 Val Glu Val Tyr Ser Arg Ala Asn Asp Gln Glu Pro Cys Gly Trp Trp
 65 70 75 80
 Leu Ala Lys Val Arg Met Met Lys Gly Glu Phe Tyr Val Ile Glu Tyr
 85 90 95
 Ala Ala Cys Asp Ala Thr Tyr Asn Glu Ile Val Thr Phe Glu Arg Leu
 100 105 110
 Arg Pro Val Asn Gln Asn Lys Thr Val Lys Lys Asn Thr Phe Phe Lys
 115 120 125
 Cys Thr Val Asp Val Pro Glu Asp Leu Arg Glu Ala Cys Ala Asn Glu
 130 135 140
 Asn Ala His Lys Asp Phe Lys Lys Ala Val Gly Ala Cys Arg Ile Phe
 145 150 155 160

Tyr His Pro Glu Thr Thr Gln Leu Met Ile Leu Ser Ala Ser Glu Ala
 165 170 175
 Thr Val Lys Arg Val Asn Ile Leu Ser Asp Met His Leu Arg Ser Ile
 180 185 190
 Arg Thr Lys Leu Met Leu Met Ser Arg Asn Glu Glu Ala Thr Lys His
 195 200 205
 Leu Glu Cys Thr Lys Gln Leu Ala Ala Ala Phe His Glu Glu Phe Val
 210 215 220
 Val Arg Glu Asp Leu Met Gly Leu Ala Ile Gly Thr His Gly Ser Asn
 225 230 235 240
 Ile Gln Gln Ala Arg Lys Val Pro Gly Val Thr Ala Ile Glu Leu Asp
 245 250 255
 Glu Asp Thr Gly Thr Phe Arg Ile Tyr Gly Glu Ser Ala Glu Ala Val
 260 265 270
 Lys Lys Ala Arg Gly Phe Leu Glu Phe Val Glu Asp Phe Ile Gln Val
 275 280 285
 Pro Arg Asn Leu Val Gly Lys Val Ile Gly Lys Asn Gly Lys Val Ile
 290 295 300
 Gln Glu Ile Val Asp Lys Ser Gly Val Val Arg Val Arg Ile Glu Gly
 305 310 315 320
 Asp Asn Glu Asn Lys Leu Pro Arg Glu Asp Gly Met Val Pro Phe Val
 325 330 335
 Phe Val Gly Thr Lys Glu Ser Ile Gly Asn Val Gln Val Leu Leu Glu
 340 345 350
 Tyr His Ile Ala Tyr Leu Lys Glu Val Glu Gln Leu Arg Met Glu Arg
 355 360 365
 Leu Gln Ile Asp Glu Gln Leu Arg Gln Ile Gly Ser Arg Ser Tyr Ser
 370 375 380
 Gly Arg Gly Arg Gly Arg Arg Gly Pro Asn Tyr Thr Ser Gly Tyr Gly

385 390 395 400
 Thr Asn Ser Glu Leu Ser Asn Pro Ser Glu Thr Glu Ser Glu Arg Lys
 405 410 415
 Asp Glu Leu Ser Asp Trp Ser Leu Ala Gly Glu Asp Asp Arg Glu Thr
 420 425 430
 Arg His Gln Arg Asp Ser Arg Arg Arg Pro Gly Gly Arg Gly Arg Ser
 435 440 445
 Val Ser Gly Gly Arg Gly Arg Gly Gly Pro Arg Gly Gly Lys Ser Ser
 450 455 460
 Ile Ser Ser Val Leu Lys Asp Pro Asp Ser Asn Pro Tyr Ser Leu Leu
 465 470 475 480
 Asp Asn Thr Glu Ser Asp Gln Thr Ala Asp Thr Asp Ala Ser Glu Ser
 485 490 495
 His His Ser Thr Asn Arg Arg Arg Arg Ser Arg Arg Arg Arg Thr Asp
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 Glu Asp Ala Val Leu Met Asp Gly Leu Thr Glu Ser Asp Thr Ala Ser
 515 520 525
 Val Asn Glu Asn Gly Leu Gly Lys Arg Cys Asp
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<210> 295

<211> 3069

<212> DNA

<213> Mus musculus

<220>

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<222> (113).. (1555)

<400> 295

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Met Leu

1

aac ttc ggg gcg ctt ctc tcc agc aag ctt cgg agg gga aaa ttg gaa 166

Asn Phe Gly Ala Leu Leu Ser Ser Lys Leu Arg Arg Gly Lys Leu Glu

5

10

15

cta att tct gaa aag ccc aga gag ggg atg cat ccc tgg gac aaa gct 214

Leu Ile Ser Glu Lys Pro Arg Glu Gly Met His Pro Trp Asp Lys Ala

20

25

30

gag cag agt gac ttt gaa gcg gtg gaa gcg ctc atg tcc atg agc tgc 262

Glu Gln Ser Asp Phe Glu Ala Val Glu Ala Leu Met Ser Met Ser Cys

35

40

45

50

gac tgg aag tct cat ttc aag aaa tac ctt gaa aac agg cct gtc aca 310

Asp Trp Lys Ser His Phe Lys Lys Tyr Leu Glu Asn Arg Pro Val Thr

55

60

65

cca gtg tct gat acc tcc gag gat gac agc ttg ctt cca ggg acg cct 358

Pro Val Ser Asp Thr Ser Glu Asp Asp Ser Leu Leu Pro Gly Thr Pro

70

75

80

gac ctt cag aca gtc cca gca ttt tgt tta acg cca cct tac agc ccc 406

Asp Leu Gln Thr Val Pro Ala Phe Cys Leu Thr Pro Pro Tyr Ser Pro

85

90

95

tct gac ttc gaa ccc tcc caa ggg tca aat ctg act gca tca gcg cca 454

Ser Asp Phe Glu Pro Ser Gln Gly Ser Asn Leu Thr Ala Ser Ala Pro

100

105

110

tct act ggc cac ttc aaa tct ttc tcc gat tct gcc aag cct cca ggc 502

Ser Thr Gly His Phe Lys Ser Phe Ser Asp Ser Ala Lys Pro Pro Gly

115

120

125

130

gcc act cct ttc aaa gag gag gaa aag aat cct tta gct gcc cct cct 550
 Ala Thr Pro Phe Lys Glu Glu Glu Lys Asn Pro Leu Ala Ala Pro Pro
 135 140 145
 ctt cct aag gct caa gcc acc agt gtc atc cgt cac aca gct gat gcc 598
 Leu Pro Lys Ala Gln Ala Thr Ser Val Ile Arg His Thr Ala Asp Ala
 150 155 160
 caa ctg tgc aac cac cag tcc tgc ccc gtg aaa gca gct agc atc ctc 646
 Gln Leu Cys Asn His Gln Ser Cys Pro Val Lys Ala Ala Ser Ile Leu
 165 170 175
 aac tat cag gac aat tct ttc cgg aga aga acc cac gga aat gtt gag 694
 Asn Tyr Gln Asp Asn Ser Phe Arg Arg Arg Thr His Gly Asn Val Glu
 180 185 190
 gct act cga aag aac ata ccc tgt gct gca gtg tca cca aac aga tcc 742
 Ala Thr Arg Lys Asn Ile Pro Cys Ala Ala Val Ser Pro Asn Arg Ser
 195 200 205 210
 aag cct gag ccc agc aca gtg tcc gat ggt gat gag aag gcg ggc gct 790
 Lys Pro Glu Pro Ser Thr Val Ser Asp Gly Asp Glu Lys Ala Gly Ala
 215 220 225
 gca cta tat gac ttt gct gtg cct tcc tca gag aca gta att tgt agg 838
 Ala Leu Tyr Asp Phe Ala Val Pro Ser Ser Glu Thr Val Ile Cys Arg
 230 235 240
 tct cag cca gct tcc ttt cgt ccc cag tgc aga agt cag tac tgg tgt 886
 Ser Gln Pro Ala Ser Phe Arg Pro Gln Cys Arg Ser Gln Tyr Trp Cys
 245 250 255
 ctt cac cta cag tat cca ctg ggg gag tgc cac ccc tgc ctg tca tct 934
 Leu His Leu Gln Tyr Pro Leu Gly Glu Cys His Pro Cys Leu Ser Ser
 260 265 270
 gcc aga tgg ttc ccc ttc ctg cca aca act ctc ttg ita gca caa gtt 982
 Ala Arg Trp Phe Pro Phe Leu Pro Thr Thr Leu Leu Leu Ala Gln Val

275	280	285	290	
gtc ccc agc act cct cct agc cag cca cca gct gtc tgc tca cct gtg	1030			
Val Pro Ser Thr Pro Pro Ser Gln Pro Pro Ala Val Cys Ser Pro Val				
295	300	305		
ttg ttc atg gca ctc atg cct gag ggc acc gta cgt gtt tgt ggt acc	1078			
Leu Phe Met Ala Leu Met Pro Glu Gly Thr Val Arg Val Cys Gly Thr				
310	315	320		
cca gcc cgt tgt gca gag cca agg cct cca gtg gtg agc ccc agt ggc	1126			
Pro Ala Arg Cys Ala Glu Pro Arg Pro Pro Val Val Ser Pro Ser Gly				
325	330	335		
acc aga ctg tct ccc att gcc cct gct cct gga ttc tct cct tca gca	1174			
Thr Arg Leu Ser Pro Ile Ala Pro Ala Pro Gly Phe Ser Pro Ser Ala				
340	345	350		
gca agg gtc act cct cag att gac tcg tcc aga gta aga agt cac atc	1222			
Ala Arg Val Thr Pro Gln Ile Asp Ser Ser Arg Val Arg Ser His Ile				
355	360	365	370	
tgt agc cac cca ggg gtt ggc aag act tac ttt aaa agt tcc cat ctg	1270			
Cys Ser His Pro Gly Val Gly Lys Thr Tyr Phe Lys Ser Ser His Leu				
375	380	385		
aag gcc cac gtg agg aca cac aca ggg gaa aaa cct ttc agc tgc agc	1318			
Lys Ala His Val Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys Ser				
390	395	400		
tgg aaa ggc tgt gaa agg agg ttt gct cgc tcc gat gaa ctg tcc aga	1366			
Trp Lys Gly Cys Glu Arg Arg Phe Ala Arg Ser Asp Glu Leu Ser Arg				
405	410	415		
cac cgg cgg aca cac aca ggt gag aag aag ttt gcc tgt ccc atg tgt	1414			
His Arg Arg Thr His Thr Gly Glu Lys Lys Phe Ala Cys Pro Met Cys				
420	425	430		
gac cgt cgg ttt atg agg agc gac cat tta acc aag cat gcc cga cgc	1462			

Asp Arg Arg Phe Met Arg Ser Asp His Leu Thr Lys His Ala Arg Arg
 435 440 445 450
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 His Leu Ser Ala Lys Lys Leu Pro Asn Trp Gln Met Glu Val Ser Lys
 455 460 465
 tta aat gac att gct ctg cct ccg acc cct gct tcc gca cag tga 1555
 Leu Asn Asp Ile Ala Leu Pro Pro Thr Pro Ala Ser Ala Gln
 470 475 480
 cggccagaag atggagacgc agaataaact ttggtcagag tcaggagcca gtgatggtgt 1615
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 acagtgtaaa cctcaccaca ctttcccatt taaactatit ccataatctca gaggtttctg 2935
 acatgtcaaac ttgaaccctt gaaagaagag ttttcttaaa aattataaaa aatcacgagt 2995
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<210> 296

<211> 480

<212> PRT

<213> Mus musculus

<400> 296

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				20						25					30
Lys	Ala	Glu	Gln	Ser	Asp	Phe	Glu	Ala	Val	Glu	Ala	Leu	Met	Ser	Met
				35						40					45
Ser	Cys	Asp	Trp	Lys	Ser	His	Phe	Lys	Lys	Tyr	Leu	Glu	Asn	Arg	Pro
				50						55					60
Val	Thr	Pro	Val	Ser	Asp	Thr	Ser	Glu	Asp	Asp	Ser	Leu	Leu	Pro	Gly
				65						70					75
Thr	Pro	Asp	Leu	Gln	Thr	Val	Pro	Ala	Phe	Cys	Leu	Thr	Pro	Pro	Tyr
				85						90					95
Ser	Pro	Ser	Asp	Phe	Glu	Pro	Ser	Gln	Gly	Ser	Asn	Leu	Thr	Ala	Ser
				100						105					110
Ala	Pro	Ser	Thr	Gly	His	Phe	Lys	Ser	Phe	Ser	Asp	Ser	Ala	Lys	Pro
				115						120					125
Pro	Gly	Ala	Thr	Pro	Phe	Lys	Glu	Glu	Glu	Lys	Asn	Pro	Leu	Ala	Ala

130	135	140	
Pro Pro Leu Pro Lys Ala Gln Ala Thr Ser Val Ile Arg His Thr Ala			
145	150	155	160
Asp Ala Gln Leu Cys Asn His Gln Ser Cys Pro Val Lys Ala Ala Ser			
165	170	175	
Ile Leu Asn Tyr Gln Asp Asn Ser Phe Arg Arg Arg Thr His Gly Asn			
180	185	190	
Val Glu Ala Thr Arg Lys Asn Ile Pro Cys Ala Ala Val Ser Pro Asn			
195	200	205	
Arg Ser Lys Pro Glu Pro Ser Thr Val Ser Asp Gly Asp Glu Lys Ala			
210	215	220	
Gly Ala Ala Leu Tyr Asp Phe Ala Val Pro Ser Ser Glu Thr Val Ile			
225	230	235	240
Cys Arg Ser Gln Pro Ala Ser Phe Arg Pro Gln Cys Arg Ser Gln Tyr			
245	250	255	
Trp Cys Leu His Leu Gln Tyr Pro Leu Gly Glu Cys His Pro Cys Leu			
260	265	270	
Ser Ser Ala Arg Trp Phe Pro Phe Leu Pro Thr Thr Leu Leu Leu Ala			
275	280	285	
Gln Val Val Pro Ser Thr Pro Pro Ser Gln Pro Pro Ala Val Cys Ser			
290	295	300	
Pro Val Leu Phe Met Ala Leu Met Pro Glu Gly Thr Val Arg Val Cys			
305	310	315	320
Gly Thr Pro Ala Arg Cys Ala Glu Pro Arg Pro Pro Val Val Ser Pro			
325	330	335	
Ser Gly Thr Arg Leu Ser Pro Ile Ala Pro Ala Pro Gly Phe Ser Pro			
340	345	350	
Ser Ala Ala Arg Val Thr Pro Gln Ile Asp Ser Ser Arg Val Arg Ser			
355	360	365	

His Ile Cys Ser His Pro Gly Val Gly Lys Thr Tyr Phe Lys Ser Ser
 370 375 380
 His Leu Lys Ala His Val Arg Thr His Thr Gly Glu Lys Pro Phe Ser
 385 390 395 400
 Cys Ser Trp Lys Gly Cys Glu Arg Arg Phe Ala Arg Ser Asp Glu Leu
 405 410 415
 Ser Arg His Arg Arg Thr His Thr Gly Glu Lys Lys Phe Ala Cys Pro
 420 425 430
 Met Cys Asp Arg Arg Phe Met Arg Ser Asp His Leu Thr Lys His Ala
 435 440 445
 Arg Arg His Leu Ser Ala Lys Lys Leu Pro Asn Trp Gln Met Glu Val
 450 455 460
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<210> 297

<211> 3227

<212> DNA

<213> Mus musculus

<220>

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<222> (241).. (2142)

<400> 297

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 ggacccagca cgcctgggcc ggggcagcag tatctcttga ggcctgttgt ctgaaaggca 180
 ctgaacgcaa gagtctgcaa gtgtggtcca gatctccaga tcccccaacc cactgccacc 240

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atg gta gga aaa ggt gcc aaa ggg atg ttg aat ggt gct gtg ccc agc 288
Met Val Gly Lys Gly Ala Lys Gly Met Leu Asn Gly Ala Val Pro Ser
    1             5             10             15
gag gcc acc aag aag gac cag aac ctc aca cgg ggc aac tgg ggc aac 336
Glu Ala Thr Lys Lys Asp Gln Asn Leu Thr Arg Gly Asn Trp Gly Asn
            20             25             30
cag atc gag ttt gta ctg acg agc gtg ggc tat gcc gtg ggc ctg ggc 384
Gln Ile Glu Phe Val Leu Thr Ser Val Gly Tyr Ala Val Gly Leu Gly
            35             40             45
aat gtc tgg cgt ttc cca tac ctc tgc tat cgc aac ggg gga gga gcc 432
Asn Val Trp Arg Phe Pro Tyr Leu Cys Tyr Arg Asn Gly Gly Gly Ala
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Phe Met Phe Pro Tyr Phe Ile Met Leu Ile Phe Cys Gly Ile Pro Leu
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Phe Phe Met Glu Leu Ser Phe Gly Gln Phe Ala Ser Gln Gly Cys Leu
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ggg gtc tgg cgg atc agc ccc atg ttc aaa ggc gtg ggc tat ggt atg 576
Gly Val Trp Arg Ile Ser Pro Met Phe Lys Gly Val Gly Tyr Gly Met
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Met Val Val Ser Thr Tyr Ile Gly Ile Tyr Tyr Asn Val Val Ile Cys
            115             120             125
atc gcc ttc tac tac ttc ttc tgc tcc atg acg cac gtg ctg ccc tgg 672
Ile Ala Phe Tyr Tyr Phe Phe Ser Ser Met Thr His Val Leu Pro Trp
            130             135             140
gcg tac tgc aac aac ccc tgg aac aca cct gac tgt gcc ggt gtg ctg 720
Ala Tyr Cys Asn Asn Pro Trp Asn Thr Pro Asp Cys Ala Gly Val Leu

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aac ctg tct cac ctg ttc aac tac acc ttg caa agg acc agc ccc agc				816
Asn Leu Ser His Leu Phe Asn Tyr Thr Leu Gln Arg Thr Ser Pro Ser				
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gag gag tac tgg agg ctg tat gtg ctg aag ctg tca gac gac att gga				864
Glu Glu Tyr Trp Arg Leu Tyr Val Leu Lys Leu Ser Asp Asp Ile Gly				
	195	200	205	
aac ttt ggg gaa gtg cgg ctt ccc ctc cta ggc tgc ctc ggc gtc tcc				912
Asn Phe Gly Glu Val Arg Leu Pro Leu Leu Gly Cys Leu Gly Val Ser				
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Trp Val Val Val Phe Leu Cys Leu Ile Arg Gly Val Lys Ser Ser Gly				
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Lys Val Val Tyr Phe Thr Ala Thr Phe Pro Tyr Val Val Leu Thr Ile				
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ctg ttt gtt cgt gga gtg acc ctg gaa gga gcc ttc acg ggt atc atg				1056
Leu Phe Val Arg Gly Val Thr Leu Glu Gly Ala Phe Thr Gly Ile Met				
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tac tac ctg acc cca caa tgg gac aag tac ctg gag gcc aag gtc tgg				1104
Tyr Tyr Leu Thr Pro Gln Trp Asp Lys Tyr Leu Glu Ala Lys Val Trp				
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Gly Asp Ala Ala Ser Gln Ile Phe Tyr Ser Leu Gly Cys Ala Trp Gly				
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Val	Ala	Tyr	Pro	Glu	Ala	Leu	Thr	Leu	Leu	Pro	Ile	Ser	Pro	Leu	Trp		
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tcc	tta	tig	ttt	ttc	ttc	atg	ctc	atc	ttg	ctg	ggg	ctg	ggt	act	cag	1440	
Ser	Leu	Leu	Phe	Phe	Phe	Met	Leu	Ile	Leu	Leu	Gly	Leu	Gly	Thr	Gln		
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Phe	Cys	Leu	Leu	Glu	Thr	Leu	Val	Thr	Ala	Ile	Val	Asp	Glu	Val	Gly		
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aat	gag	tgg	att	ctg	cag	aag	aag	acc	tac	gtg	acc	ttg	ggc	gtc	gct	1536	
Asn	Glu	Trp	Ile	Leu	Gln	Lys	Lys	Thr	Tyr	Val	Thr	Leu	Gly	Val	Ala		
			420						425						430		
gtg	gct	ggc	ttc	tig	ctg	ggc	atc	ccc	ctt	acc	agc	cag	gca	ggc	atc	1584	
Val	Ala	Gly	Phe	Leu	Leu	Gly	Ile	Pro	Leu	Thr	Ser	Gln	Ala	Gly	Ile		
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Tyr	Trp	Leu	Leu	Leu	Met	Asp	Asn	Tyr	Ala	Ala	Ser	Phe	Ser	Leu	Val		
		450					455								460		

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 Pro Ser Arg Asp Trp Gly Pro Ala Leu Leu Glu His Arg Thr Gly Arg
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 Pro Leu His Pro Asp Lys Ala Gln Ile Pro Ile Val Gly Ser Asn Gly

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<212> PRT

<213> Mus musculus

<400> 298

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 Asn Val Trp Arg Phe Pro Tyr Leu Cys Tyr Arg Asn Gly Gly Gly Ala
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 Gly Val Trp Arg Ile Ser Pro Met Phe Lys Gly Val Gly Tyr Gly Met
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 Met Val Val Ser Thr Tyr Ile Gly Ile Tyr Tyr Asn Val Val Ile Cys
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 Ala Tyr Cys Asn Asn Pro Trp Asn Thr Pro Asp Cys Ala Gly Val Leu
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 Asp Ala Ser Asn Leu Thr Asn Gly Ser Arg Pro Ala Ala Leu Ser Gly
 165 170 175
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 Glu Glu Tyr Trp Arg Leu Tyr Val Leu Lys Leu Ser Asp Asp Ile Gly
 195 200 205
 Asn Phe Gly Glu Val Arg Leu Pro Leu Leu Gly Cys Leu Gly Val Ser
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 Trp Val Val Val Phe Leu Cys Leu Ile Arg Gly Val Lys Ser Ser Gly

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Leu Phe Val Arg Gly Val Thr Leu Glu Gly Ala Phe Thr Gly Ile Met			
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Tyr Tyr Leu Thr Pro Gln Trp Asp Lys Tyr Leu Glu Ala Lys Val Trp			
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Gly Asp Ala Ala Ser Gln Ile Phe Tyr Ser Leu Gly Cys Ala Trp Gly			
290	295	300	
Gly Leu Ile Thr Met Ala Ser Tyr Asn Lys Phe His Asn Asn Cys Tyr			
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Arg Asp Ser Val Ile Ile Ser Ile Thr Asn Cys Ala Thr Arg Leu Tyr			
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Ala Gly Phe Val Ile Phe Ser Ile Leu Gly Phe Met Ala Asn His Leu			
340	345	350	
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355	360	365	
Val Ala Tyr Pro Glu Ala Leu Thr Leu Leu Pro Ile Ser Pro Leu Trp			
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Val Ala Gly Phe Leu Leu Gly Ile Pro Leu Thr Ser Gln Ala Gly Ile			
435	440	445	
Tyr Trp Leu Leu Leu Met Asp Asn Tyr Ala Ala Ser Phe Ser Leu Val			
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 Tyr Ala Pro Thr Thr Thr Pro Ser Pro Glu Asp Gly Phe Glu Val Gln
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<400> 299

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Gly Gly Lys Ala Pro Arg Lys Gln Leu Ala Thr Lys Ala Ala Arg Lys
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agc gcg ccc tct acc ggc ggg gtg aag aag cct cac cgc tac agg cca 205
Ser Ala Pro Ser Thr Gly Gly Val Lys Lys Pro His Arg Tyr Arg Pro
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ggg acc gtg gct ctg aga gag atc cgt cgt tac cag aaa tcg act gag 253
Gly Thr Val Ala Leu Arg Glu Ile Arg Arg Tyr Gln Lys Ser Thr Glu
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cag gat ttc aaa acc gac ttg agg ttt caa agt gca gcc atc ggt gcc 349
Gln Asp Phe Lys Thr Asp Leu Arg Phe Gln Ser Ala Ala Ile Gly Ala
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cct cag gag gct agc gaa gca tac ctg gtg ggg ttg ttt gaa gat acc 397
Leu Gln Glu Ala Ser Glu Ala Tyr Leu Val Gly Leu Phe Glu Asp Thr
            95             100             105
aat ctg tgt gcc atc cac gcc aag aga gtc acc atc atg ccc aaa gac 445
Asn Leu Cys Ala Ile His Ala Lys Arg Val Thr Ile Met Pro Lys Asp
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 Lys Leu Pro Phe Gln Arg Leu Val Arg Glu Ile Ala Gln Asp Phe Lys
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Val Leu Leu Phe Ala Leu Val Leu Leu Ala Phe Gln Val Gln Ala Asp

5

10

15

20

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Ser Ile Gln Asn Thr Asp Glu Glu Thr Lys Thr Glu Glu Gln Pro Gly

25

30

35

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Glu Lys Asp Gln Ala Val Ser Val Ser Phe Gly Asp Pro Gln Gly Ser

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Ala Leu Gln Asp Ala Ala Leu Gly Trp Gly Arg Arg Cys Pro Gln Cys

55

60

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80

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Arg Cys Lys Cys Asn Pro Lys

85

90

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20

25

30

Glu Gln Pro Gly Glu Lys Asp Gln Ala Val Ser Val Ser Phe Gly Asp

35

40

45

Pro Gln Gly Ser Ala Leu Gln Asp Ala Ala Leu Gly Trp Gly Arg Arg

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Cys Pro Gln Cys Pro Arg Cys Pro Ser Cys Pro Ser Cys Pro Arg Cys

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 Thr Ser Gly Phe Pro Arg Ser Pro Leu Arg Leu Leu Gly Lys Arg Ser

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Leu Pro Glu Gly Val Val Asp Gly Ile Glu Val Tyr Ser Thr Lys Ile			
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Ser Cys Lys Val Thr Ser Arg Phe Ala His Asn Val Val Thr Thr Arg			
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gct gtc aac cgt gca gac aca gcc aag gag gtg tcc ttt gat gtg gaa	241		
Ala Val Asn Arg Ala Asp Thr Ala Lys Glu Val Ser Phe Asp Val Glu			
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ctg ccc aag aca gcc ttc atc acc aac ttc acc ttg acc att gat ggt	289		
Leu Pro Lys Thr Ala Phe Ile Thr Asn Phe Thr Leu Thr Ile Asp Gly			
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gtc acc tac ccc ggg aac gtc aag gag aag gaa gtt gcc cag aaa caa	337		
Val Thr Tyr Pro Gly Asn Val Lys Glu Lys Glu Val Ala Gln Lys Gln			
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tat gaa aag gct gtg tcc cag ggc aag aca gcc ggt ttg gtc aag gcc	385		
Tyr Glu Lys Ala Val Ser Gln Gly Lys Thr Ala Gly Leu Val Lys Ala			
115	120	125	
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Ser Gly Arg Lys Leu Glu Lys Phe Thr Val Ser Val Asn Val Ala Ala			
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Gly Ser Lys Val Thr Phe Glu Leu Thr Tyr Glu Glu Leu Leu Lys Arg			
145	150	155	
aac aag ggc aag tac gag atg tac ctt aag gtc cag ccc aaa caa ctg	529		
Asn Lys Gly Lys Tyr Glu Met Tyr Leu Lys Val Gln Pro Lys Gln Leu			
160	165	170	175
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 Ser Ala Leu Thr Lys Ser Phe Ser Gly Lys Lys Gly His Val Ser Phe
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 Lys Pro Ser Leu Asp Gln Gln Arg Ser Cys Pro Thr Cys Thr Asp Ser
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625	630	635		
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 660 665 670
 ctg cgc ctg att cag gac cca gtc aca ggt atc act gtg acc gga cag 2065
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 gta aca atc aac agg aaa aag aat atg gtg gtg tcc ttt gga gat ggg 2305
 Val Thr Ile Asn Arg Lys Lys Asn Met Val Val Ser Phe Gly Asp Gly
 755 760 765
 att agc ttt gtg atc atc cta cac cag gtt tgg aag aaa cat cca gtt 2353
 Ile Ser Phe Val Ile Ile Leu His Gln Val Trp Lys Lys His Pro Val
 770 775 780
 cac cag gac ttc cta ggg ttc tac gtg gtg gac agt cac cgg atg tca 2401
 His Gln Asp Phe Leu Gly Phe Tyr Val Val Asp Ser His Arg Met Ser
 785 790 795

gca cag aca cat ggg ctg ctg ggc cag ttc ttc caa ccc ttt gac ttt 2449
 Ala Gln Thr His Gly Leu Leu Gly Gln Phe Phe Gln Pro Phe Asp Phe
 800 805 810 815
 aaa gtg ttt ggc atc cgc cca ggc tct gac cct aca aag cca gat gcc 2497
 Lys Val Phe Gly Ile Arg Pro Gly Ser Asp Pro Thr Lys Pro Asp Ala
 820 825 830
 aca atg gtg gtg aag aat cat cgg ttg act gtc aca agg ggc tcc cag 2545
 Thr Met Val Val Lys Asn His Arg Leu Thr Val Thr Arg Gly Ser Gln
 835 840 845
 aaa gat tac agg aag gat gcc agt gtt ggc acc aag gtc atc tgc tgg 2593
 Lys Asp Tyr Arg Lys Asp Ala Ser Val Gly Thr Lys Val Ile Cys Trp
 850 855 860
 ttt gtc cat aac aat gga gaa gga cta att gat ggt gtc cat acc gac 2641
 Phe Val His Asn Asn Gly Glu Gly Leu Ile Asp Gly Val His Thr Asp
 865 870 875
 tat att gtc ccc agc ttg ttc tga gtagcatgtc agctgctgat gaagtagaag 2695
 Tyr Ile Val Pro Ser Leu Phe
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<210> 308

<211> 886

<212> PRT

<213> Mus musculus

<400> 308

Met Trp Trp Pro Cys Leu Val Leu Ala Leu Leu Ser Gly Leu Glu Thr

1

5

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15

Ser Gly Phe Pro Arg Ser Pro Leu Arg Leu Leu Gly Lys Arg Ser Leu
 20 25 30
 Pro Glu Gly Val Val Asp Gly Ile Glu Val Tyr Ser Thr Lys Ile Ser
 35 40 45
 Cys Lys Val Thr Ser Arg Phe Ala His Asn Val Val Thr Thr Arg Ala
 50 55 60
 Val Asn Arg Ala Asp Thr Ala Lys Glu Val Ser Phe Asp Val Glu Leu
 65 70 75 80
 Pro Lys Thr Ala Phe Ile Thr Asn Phe Thr Leu Thr Ile Asp Gly Val
 85 90 95
 Thr Tyr Pro Gly Asn Val Lys Glu Lys Glu Val Ala Gln Lys Gln Tyr
 100 105 110
 Glu Lys Ala Val Ser Gln Gly Lys Thr Ala Gly Leu Val Lys Ala Ser
 115 120 125
 Gly Arg Lys Leu Glu Lys Phe Thr Val Ser Val Asn Val Ala Ala Gly
 130 135 140
 Ser Lys Val Thr Phe Glu Leu Thr Tyr Glu Glu Leu Leu Lys Arg Asn
 145 150 155 160
 Lys Gly Lys Tyr Glu Met Tyr Leu Lys Val Gln Pro Lys Gln Leu Val
 165 170 175
 Arg His Phe Glu Ile Asp Ala His Ile Phe Glu Pro Gln Gly Ile Ser
 180 185 190
 Met Leu Asp Ala Glu Ala Ser Phe Ile Thr Asn Asp Leu Leu Gly Ser
 195 200 205
 Ala Leu Thr Lys Ser Phe Ser Gly Lys Lys Gly His Val Ser Phe Lys
 210 215 220
 Pro Ser Leu Asp Gln Gln Arg Ser Cys Pro Thr Cys Thr Asp Ser Leu
 225 230 235 240
 Leu Asn Gly Asp Phe Thr Ile Val Tyr Asp Val Asn Arg Glu Ser Pro

	245		250		255
Gly Asn Val Gln Ile Val Asn Gly Tyr Phe Val His Phe Phe Ala Pro					
	260		265		270
Gln Gly Leu Pro Val Val Pro Lys Asn Ile Val Phe Val Ile Asp Val					
	275		280		285
Ser Gly Ser Met Ser Gly Arg Lys Ile Gln Gln Thr Arg Glu Ala Leu					
	290		295		300
Leu Lys Ile Leu Asp Asp Val Lys Glu Asp Asp Tyr Leu Asn Phe Ile					
305		310		315	320
Leu Phe Ser Thr Asp Val Thr Thr Trp Lys Asp His Leu Val Gln Ala					
	325		330		335
Thr Pro Ala Asn Leu Lys Glu Ala Lys Thr Phe Val Lys Asn Ile His					
	340		345		350
Asp Gln Ser Met Thr Asn Ile Asn Asp Gly Leu Leu Lys Gly Ile Glu					
	355		360		365
Met Leu Asn Lys Ala Arg Glu Asp His Thr Val Pro Glu Arg Ser Thr					
	370		375		380
Ser Ile Ile Ile Met Leu Thr Asp Gly Asp Ala Asn Thr Gly Glu Ser					
385		390		395	400
Arg Pro Glu Lys Ile Gln Glu Asn Val Arg Asn Ala Ile Gly Gly Lys					
	405		410		415
Phe Pro Leu Tyr Asn Leu Gly Phe Gly Asn Asn Leu Asn Tyr Asn Phe					
	420		425		430
Leu Glu Thr Leu Ala Leu Glu Asn His Gly Leu Ala Arg Arg Ile Tyr					
	435		440		445
Glu Asp Ser Asp Ala Asn Leu Gln Leu Gln Gly Phe Tyr Glu Glu Val					
	450		455		460
Ala Asn Pro Leu Leu Thr Asn Val Glu Val Glu Tyr Pro Glu Asn Ala					
465		470		475	480

Ile Leu Asp Leu Thr Arg Asn Ser Tyr Pro His Phe Tyr Asp Gly Ser
 485 490 495
 Glu Ile Val Val Ala Gly Arg Leu Val Asp Arg Asn Met Asp Asn Phe
 500 505 510
 Lys Ala Asp Val Lys Gly His Gly Ala Leu Asn Asp Leu Thr Phe Thr
 515 520 525
 Glu Glu Val Asp Met Glu Glu Met Asp Ala Ala Leu Lys Glu Gln Gly
 530 535 540
 Tyr Ile Phe Gly Asp Tyr Ile Glu Arg Leu Trp Ala Tyr Leu Thr Ile
 545 550 555 560
 Glu Gln Leu Leu Glu Lys Arg Lys Asn Ala Lys Gly Asp Glu Lys Glu
 565 570 575
 Asn Ile Thr Ala Glu Ala Leu Asp Leu Ser Leu Lys Tyr His Phe Val
 580 585 590
 Thr Pro Leu Thr Ser Met Val Val Thr Lys Pro Glu Asp Asn Glu Asp
 595 600 605
 Gln Thr Ser Ile Ala Asp Asn Ala Gly Glu Glu Ala Phe Ala Glu Thr
 610 615 620
 Thr Thr Met Ser Phe Leu Thr Thr Gln Gln Ser Ser Gln Ser Pro Tyr
 625 630 635 640
 Tyr Tyr Val Asp Gly Asp Pro His Phe Ile Ile Gln Ile Pro Gly Lys
 645 650 655
 Asn Asp Ser Ile Cys Phe Asn Ile Asp Glu Lys Pro Gly Thr Val Leu
 660 665 670
 Arg Leu Ile Gln Asp Pro Val Thr Gly Ile Thr Val Thr Gly Gln Ile
 675 680 685
 Ile Gly Asp Lys Arg Ser Asn Ala Ser Ser Arg Thr Gly Lys Thr Tyr
 690 695 700
 Phe Gly Lys Leu Gly Ile Thr Asn Ala Trp Met Asp Phe Arg Val Glu

705 710 715 720
 Val Thr Thr Glu Lys Ile Ile Leu Gly Thr Gly Ala Glu Leu Ser Thr
 725 730 735
 Phe Ser Trp Leu Asp Thr Val Thr Val Thr Gln Thr Gly Leu Ser Val
 740 745 750
 Thr Ile Asn Arg Lys Lys Asn Met Val Val Ser Phe Gly Asp Gly Ile
 755 760 765
 Ser Phe Val Ile Ile Leu His Gln Val Trp Lys Lys His Pro Val His
 770 775 780
 Gln Asp Phe Leu Gly Phe Tyr Val Val Asp Ser His Arg Met Ser Ala
 785 790 795 800
 Gln Thr His Gly Leu Leu Gly Gln Phe Phe Gln Pro Phe Asp Phe Lys
 805 810 815
 Val Phe Gly Ile Arg Pro Gly Ser Asp Pro Thr Lys Pro Asp Ala Thr
 820 825 830
 Met Val Val Lys Asn His Arg Leu Thr Val Thr Arg Gly Ser Gln Lys
 835 840 845
 Asp Tyr Arg Lys Asp Ala Ser Val Gly Thr Lys Val Ile Cys Trp Phe
 850 855 860
 Val His Asn Asn Gly Glu Gly Leu Ile Asp Gly Val His Thr Asp Tyr
 865 870 875 880
 Ile Val Pro Ser Leu Phe
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<210> 309

<211> 460

<212> DNA

<213> Mus musculus

<400> 309

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aagccgcgat atgggcttgc tggacagact ttcaggtttg ctggcctga agaagaagga 180
ggttcatgtt ctgtgcctgg ggctggataa cagtgggaaa accacaatca ttaacaagct 240
gaagccctcc aacgctcaat ctcaagatat agttccaacc ataggattta gcatagagaa 300
attcaagtcc tccagtttgt cttttacagt gtttgacatg tcaggccaag gaaggtacag 360
gaatctcigg gaacactatt ataaagatgg acaagccatt atttttgtca ttgatagtag 420
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<211> 70

<212> DNA

<213> Mus musculus

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<211> 3424

<212> DNA

<213> Mus musculus

<220>

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<222> (75).. (2744)

<400> 311

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 Met Lys Asn Pro Phe Ala His Leu Ala Glu Pro Leu
 1 5 10
 gac gct gcc caa cca gga aag agg ttc ttc aac ttg aat aaa ttg gag 158
 Asp Ala Ala Gln Pro Gly Lys Arg Phe Phe Asn Leu Asn Lys Leu Glu
 15 20 25
 gac tca aga tac gga cgc tta cca ttt tct atc aga gtt ctc ctg gag 206
 Asp Ser Arg Tyr Gly Arg Leu Pro Phe Ser Ile Arg Val Leu Leu Glu
 30 35 40
 gca gcc gtt cgg aac tgt gat gag ttt ctg gtg aag aaa aat gac atc 254
 Ala Ala Val Arg Asn Cys Asp Glu Phe Leu Val Lys Lys Asn Asp Ile
 45 50 55 60
 gag aat atc ctg aat tgg aat gtc atg caa cat aag aac ata gaa gtg 302
 Glu Asn Ile Leu Asn Trp Asn Val Met Gln His Lys Asn Ile Glu Val
 65 70 75
 ccg ttt aag cca gcc cga gtc ata ctg caa gac ttt acg ggt gtg cct 350
 Pro Phe Lys Pro Ala Arg Val Ile Leu Gln Asp Phe Thr Gly Val Pro
 80 85 90
 gct gtg gtg gat ttt gca gca atg cgc gat gct gtg aag aag ttg gga 398
 Ala Val Val Asp Phe Ala Ala Met Arg Asp Ala Val Lys Lys Leu Gly
 95 100 105
 ggg aat ccg gag aaa att aac cct gtc tgc ccc gct gac ctt gta att 446
 Gly Asn Pro Glu Lys Ile Asn Pro Val Cys Pro Ala Asp Leu Val Ile
 110 115 120
 gat cat tcc atc cag gtt gat ttc aac aga agg gca gac agt tta cag 494
 Asp His Ser Ile Gln Val Asp Phe Asn Arg Arg Ala Asp Ser Leu Gln
 125 130 135 140
 aag aat caa gac ctg gag ttt gaa aga aat aaa gaa cga ttt gaa ttt 542

Lys Asn Gln Asp Leu Glu Phe Glu Arg Asn Lys Glu Arg Phe Glu Phe
 145 150 155
 cta aag tgg ggt tcc cag gcc ttt tgc aac atg cgg ata atc cct cct 590
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 ggc tgc gga atc att cac caa gtg aac ctg gag tat ttg gca aga gta 638
 Gly Ser Gly Ile Ile His Gln Val Asn Leu Glu Tyr Leu Ala Arg Val
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 gtg ttt gat cag gat gga tgc tac tac cca gac agc ctc gtg ggc aca 686
 Val Phe Asp Gln Asp Gly Cys Tyr Tyr Pro Asp Ser Leu Val Gly Thr
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 Asp Ser His Thr Thr Met Ile Asp Gly Leu Gly Val Leu Gly Trp Gly
 205 210 215 220
 gtg ggt ggt att gaa gca gaa gct gtc atg ctg ggt cag ccc atc agc 782
 Val Gly Gly Ile Glu Ala Glu Ala Val Met Leu Gly Gln Pro Ile Ser
 225 230 235
 atg gtg ctt ccc cag gtg att ggc tac aag ctg atg ggg aag cct cac 830
 Met Val Leu Pro Gln Val Ile Gly Tyr Lys Leu Met Gly Lys Pro His
 240 245 250
 cct ctg gtg aca tcc acg gac atc gtg ctc acc att acc aag cac ctc 878
 Pro Leu Val Thr Ser Thr Asp Ile Val Leu Thr Ile Thr Lys His Leu
 255 260 265
 cga caa gtg gga gtt gtg ggc aaa ttt gtg gag ttt ttc ggg cca gga 926
 Arg Gln Val Gly Val Val Gly Lys Phe Val Glu Phe Phe Gly Pro Gly
 270 275 280
 gtg gct cag ctg tcc att gct gac cga gct acg att gcc aat atg tgc 974
 Val Ala Gln Leu Ser Ile Ala Asp Arg Ala Thr Ile Ala Asn Met Cys
 285 290 295 300

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cca gag tat ggt gcg aca gca gcc ttc ttc ccg gtt gat gaa gtt agc 1022
Pro Glu Tyr Gly Ala Thr Ala Ala Phe Phe Pro Val Asp Glu Val Ser
          305          310          315

atc gcg tac ctg ctg cag aca ggc cgc gag gaa gac aaa gtc aag cac 1070
Ile Ala Tyr Leu Leu Gln Thr Gly Arg Glu Glu Asp Lys Val Lys His
          320          325          330

att cag aag tat ctt cag gct gta ggc atg ttt cga gat ttc aac gac 1118
Ile Gln Lys Tyr Leu Gln Ala Val Gly Met Phe Arg Asp Phe Asn Asp
          335          340          345

acc tct caa gac cca gac ttc act cag gtt gtg gag tta gat ctg aaa 1166
Thr Ser Gln Asp Pro Asp Phe Thr Gln Val Val Glu Leu Asp Leu Lys
          350          355          360

aca gtt gtg cct tgc tgc agt gga ccc aaa aga cct cag gac aaa gtc 1214
Thr Val Val Pro Cys Cys Ser Gly Pro Lys Arg Pro Gln Asp Lys Val
          365          370          375          380

gcg gtg tct gag atg aaa aag gac ttt gaa agc tgc ctt gga gcc aag 1262
Ala Val Ser Glu Met Lys Lys Asp Phe Glu Ser Cys Leu Gly Ala Lys
          385          390          395

caa gga ttt aaa ggt ttc caa gtt gct cca gac cgt cac aat gac cgc 1310
Gln Gly Phe Lys Gly Phe Gln Val Ala Pro Asp Arg His Asn Asp Arg
          400          405          410

aag acg ttc ctc tat agt aac agt gaa ttc act ctc gct cat ggc tct 1358
Lys Thr Phe Leu Tyr Ser Asn Ser Glu Phe Thr Leu Ala His Gly Ser
          415          420          425

gtg gta atc gct gcc atc act acg tgc aca aac acc agc aat cca tcc 1406
Val Val Ile Ala Ala Ile Thr Thr Cys Thr Asn Thr Ser Asn Pro Ser
          430          435          440

gtg atg tta gga gca gga ttg tta gca aag aaa gct gtg gag gcg ggg 1454
Val Met Leu Gly Ala Gly Leu Leu Ala Lys Lys Ala Val Glu Ala Gly

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445	450	455	460	
ctg agt gtg aag cct tac atc aaa acc agc ctg tct cct gga agt gga	1502			
Leu Ser Val Lys Pro Tyr Ile Lys Thr Ser Leu Ser Pro Gly Ser Gly				
	465	470	475	
gtg gtc acc tac tac ctt cga gag agt gga gtc atg cct tac ctg tcc	1550			
Val Val Thr Tyr Tyr Leu Arg Glu Ser Gly Val Met Pro Tyr Leu Ser				
	480	485	490	
cag tta ggg ttt gat gtg gtg ggc tac ggc tgc atg acc tgc atc ggc	1598			
Gln Leu Gly Phe Asp Val Val Gly Tyr Gly Cys Met Thr Cys Ile Gly				
	495	500	505	
aac agt gga ccc ctt cct gaa cct gtg gtc gag gca atc acc cag gga	1646			
Asn Ser Gly Pro Leu Pro Glu Pro Val Val Glu Ala Ile Thr Gln Gly				
	510	515	520	
gac ctc gta gct gtt ggc gtt ctg tct ggg aat agg aat ttt gaa ggc	1694			
Asp Leu Val Ala Val Gly Val Leu Ser Gly Asn Arg Asn Phe Glu Gly				
525	530	535	540	
cga gtc cat cct aac aca cga gcc aac tac tta gca tcc ccc cct ctg	1742			
Arg Val His Pro Asn Thr Arg Ala Asn Tyr Leu Ala Ser Pro Pro Leu				
	545	550	555	
gta ata gca tat gcg att gca ggc acc gtc agg att gac ttc gag aaa	1790			
Val Ile Ala Tyr Ala Ile Ala Gly Thr Val Arg Ile Asp Phe Glu Lys				
	560	565	570	
gag cct ttg gga gtg aac gca cag ggc cgg caa gtg ttt ctg aag gac	1838			
Glu Pro Leu Gly Val Asn Ala Gln Gly Arg Gln Val Phe Leu Lys Asp				
	575	580	585	
atc tgg ccc acg cga gat gag atc cag gcg gtg gaa agg cag cat gtc	1886			
Ile Trp Pro Thr Arg Asp Glu Ile Gln Ala Val Glu Arg Gln His Val				
	590	595	600	
atc ccc ggg atg ttt aag gag gtc tat cag aaa ata gag act gta aac	1934			

Ile Pro Gly Met Phe Lys Glu Val Tyr Gln Lys Ile Glu Thr Val Asn
 605 610 615 620
 aaa agc tgg aat gcc tta gca gcc ccg tca gag aag ctg tat gcg tgg 1982
 Lys Ser Trp Asn Ala Leu Ala Ala Pro Ser Glu Lys Leu Tyr Ala Trp
 625 630 635
 aat ccc aaa tct act tac att aag tcg cca cca ttc ttt gaa agc ttg 2030
 Asn Pro Lys Ser Thr Tyr Ile Lys Ser Pro Pro Phe Phe Glu Ser Leu
 640 645 650
 act tta gat ctc cag cca ccc aag tcc ata gtg gat gcc tat gtg cta 2078
 Thr Leu Asp Leu Gln Pro Pro Lys Ser Ile Val Asp Ala Tyr Val Leu
 655 660 665
 ctg aat tta gga gat tca gta aca acg gac cat atc tct ccc gcc ggc 2126
 Leu Asn Leu Gly Asp Ser Val Thr Thr Asp His Ile Ser Pro Ala Gly
 670 675 680
 aat att gca aga aac agc cct gcg gct cgc tac ttg acg aac aga ggc 2174
 Asn Ile Ala Arg Asn Ser Pro Ala Ala Arg Tyr Leu Thr Asn Arg Gly
 685 690 695 700
 cta aca cca cga gag ttc aac tcc tat ggc tcc cgc cgg ggt aac gac 2222
 Leu Thr Pro Arg Glu Phe Asn Ser Tyr Gly Ser Arg Arg Gly Asn Asp
 705 710 715
 gcc atc atg gcc cgg ggg aca ttt gcc aac att cgc ttg ctg aac aag 2270
 Ala Ile Met Ala Arg Gly Thr Phe Ala Asn Ile Arg Leu Leu Asn Lys
 720 725 730
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 Phe Leu Asn Lys Gln Ala Pro Gln Thr Val His Leu Pro Ser Gly Glu
 735 740 745
 acc ctt gat gta ttc gac gct gct gag cgg tac cag cag gct gga ctt 2366
 Thr Leu Asp Val Phe Asp Ala Ala Glu Arg Tyr Gln Gln Ala Gly Leu
 750 755 760


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ccc ctg att gtt ctg gct ggg aaa gaa tac ggt tca ggc agc tcc cga 2414
Pro Leu Ile Val Leu Ala Gly Lys Glu Tyr Gly Ser Gly Ser Ser Arg
765          770          775          780
gac tgg gca gcc aaa ggc cct ttc ctg ctg gga atc aaa gct gtc ctg 2462
Asp Trp Ala Ala Lys Gly Pro Phe Leu Leu Gly Ile Lys Ala Val Leu
          785          790          795
gca gag agc tat gag cgc att cac cgc agc aac ttg gtt ggc atg ggg 2510
Ala Glu Ser Tyr Glu Arg Ile His Arg Ser Asn Leu Val Gly Met Gly
          800          805          810
gtg atc ccc ctt gag tat ctc cct ggt gaa act gca gac tct ctg gga 2558
Val Ile Pro Leu Glu Tyr Leu Pro Gly Glu Thr Ala Asp Ser Leu Gly
          815          820          825
ctc aca ggt cgg gaa aga tac act atc aac atc cct gaa gac ctc aag 2606
Leu Thr Gly Arg Glu Arg Tyr Thr Ile Asn Ile Pro Glu Asp Leu Lys
          830          835          840
cct cgc atg acg gtg cag atc aag ctg gac act ggg aag acc ttc cag 2654
Pro Arg Met Thr Val Gln Ile Lys Leu Asp Thr Gly Lys Thr Phe Gln
845          850          855          860
gcc gtg atg agg ttc gac act gat gtg gag ctc acg tac ttc cac aat 2702
Ala Val Met Arg Phe Asp Thr Asp Val Glu Leu Thr Tyr Phe His Asn
          865          870          875
gga ggc atc ctg aac tac atg atc cga aag atg gcc cag tag 2744
Gly Gly Ile Leu Asn Tyr Met Ile Arg Lys Met Ala Gln
          880          885          890
gtgctgacct ctgaggagac ccgcacttgg tgctagaccc aatgaggaaac agggccccac 2804
tggtggaggc ctggcagagc agccacatct acttctgatg aggggtgctgg caggatgagc 2864
aagtgggcac tgccattcct ggaggcacag agccaggagt ctctagtitt gtgatttgtt 2924
catcttttta tccctttctg taatctggat tctagaatca cgggaaggtc cgtagtacca 2984
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gagctcagca ctagccagta ttctcagaag tggctcctac cttttctggtt gtctctggtt 3104
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<210> 312

<211> 889

<212> PRT

<213> Mus musculus

<400> 312

Met	Lys	Asn	Pro	Phe	Ala	His	Leu	Ala	Glu	Pro	Leu	Asp	Ala	Ala	Gln
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Gly	Arg	Leu	Pro	Phe	Ser	Ile	Arg	Val	Leu	Leu	Glu	Ala	Ala	Val	Arg
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Asn	Cys	Asp	Glu	Phe	Leu	Val	Lys	Lys	Asn	Asp	Ile	Glu	Asn	Ile	Leu
	50					55					60				
Asn	Trp	Asn	Val	Met	Gln	His	Lys	Asn	Ile	Glu	Val	Pro	Phe	Lys	Pro
65				70					75					80	
Ala	Arg	Val	Ile	Leu	Gln	Asp	Phe	Thr	Gly	Val	Pro	Ala	Val	Val	Asp
			85						90					95	
Phe	Ala	Ala	Met	Arg	Asp	Ala	Val	Lys	Lys	Leu	Gly	Gly	Asn	Pro	Glu
		100						105						110	
Lys	Ile	Asn	Pro	Val	Cys	Pro	Ala	Asp	Leu	Val	Ile	Asp	His	Ser	Ile

115	120	125
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Leu Glu Phe Glu Arg Asn Lys Glu Arg Phe Glu Phe Leu Lys Trp Gly		
145	150	155
Ser Gln Ala Phe Cys Asn Met Arg Ile Ile Pro Pro Gly Ser Gly Ile		
165	170	175
Ile His Gln Val Asn Leu Glu Tyr Leu Ala Arg Val Val Phe Asp Gln		
180	185	190
Asp Gly Cys Tyr Tyr Pro Asp Ser Leu Val Gly Thr Asp Ser His Thr		
195	200	205
Thr Met Ile Asp Gly Leu Gly Val Leu Gly Trp Gly Val Gly Gly Ile		
210	215	220
Glu Ala Glu Ala Val Met Leu Gly Gln Pro Ile Ser Met Val Leu Pro		
225	230	235
Gln Val Ile Gly Tyr Lys Leu Met Gly Lys Pro His Pro Leu Val Thr		
245	250	255
Ser Thr Asp Ile Val Leu Thr Ile Thr Lys His Leu Arg Gln Val Gly		
260	265	270
Val Val Gly Lys Phe Val Glu Phe Phe Gly Pro Gly Val Ala Gln Leu		
275	280	285
Ser Ile Ala Asp Arg Ala Thr Ile Ala Asn Met Cys Pro Glu Tyr Gly		
290	295	300
Ala Thr Ala Ala Phe Phe Pro Val Asp Glu Val Ser Ile Ala Tyr Leu		
305	310	315
Leu Gln Thr Gly Arg Glu Glu Asp Lys Val Lys His Ile Gln Lys Tyr		
325	330	335
Leu Gln Ala Val Gly Met Phe Arg Asp Phe Asn Asp Thr Ser Gln Asp		
340	345	350

Pro Asp Phe Thr Gln Val Val Glu Leu Asp Leu Lys Thr Val Val Pro
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 Cys Cys Ser Gly Pro Lys Arg Pro Gln Asp Lys Val Ala Val Ser Glu
 370 375 380
 Met Lys Lys Asp Phe Glu Ser Cys Leu Gly Ala Lys Gln Gly Phe Lys
 385 390 395 400
 Gly Phe Gln Val Ala Pro Asp Arg His Asn Asp Arg Lys Thr Phe Leu
 405 410 415
 Tyr Ser Asn Ser Glu Phe Thr Leu Ala His Gly Ser Val Val Ile Ala
 420 425 430
 Ala Ile Thr Thr Cys Thr Asn Thr Ser Asn Pro Ser Val Met Leu Gly
 435 440 445
 Ala Gly Leu Leu Ala Lys Lys Ala Val Glu Ala Gly Leu Ser Val Lys
 450 455 460
 Pro Tyr Ile Lys Thr Ser Leu Ser Pro Gly Ser Gly Val Val Thr Tyr
 465 470 475 480
 Tyr Leu Arg Glu Ser Gly Val Met Pro Tyr Leu Ser Gln Leu Gly Phe
 485 490 495
 Asp Val Val Gly Tyr Gly Cys Met Thr Cys Ile Gly Asn Ser Gly Pro
 500 505 510
 Leu Pro Glu Pro Val Val Glu Ala Ile Thr Gln Gly Asp Leu Val Ala
 515 520 525
 Val Gly Val Leu Ser Gly Asn Arg Asn Phe Glu Gly Arg Val His Pro
 530 535 540
 Asn Thr Arg Ala Asn Tyr Leu Ala Ser Pro Pro Leu Val Ile Ala Tyr
 545 550 555 560
 Ala Ile Ala Gly Thr Val Arg Ile Asp Phe Glu Lys Glu Pro Leu Gly
 565 570 575
 Val Asn Ala Gln Gly Arg Gln Val Phe Leu Lys Asp Ile Trp Pro Thr

580	585	590
Arg Asp Glu Ile Gln Ala Val	Glu Arg Gln His Val	Ile Pro Gly Met
595	600	605
Phe Lys Glu Val Tyr Gln Lys	Ile Glu Thr Val Asn Lys	Ser Trp Asn
610	615	620
Ala Leu Ala Ala Pro Ser Glu	Lys Leu Tyr Ala Trp Asn	Pro Lys Ser
625	630	635
Thr Tyr Ile Lys Ser Pro Pro	Phe Phe Glu Ser Leu Thr	Leu Asp Leu
645	650	655
Gln Pro Pro Lys Ser Ile Val	Asp Ala Tyr Val Leu Leu	Asn Leu Gly
660	665	670
Asp Ser Val Thr Thr Asp His	Ile Ser Pro Ala Gly Asn	Ile Ala Arg
675	680	685
Asn Ser Pro Ala Ala Arg Tyr	Leu Thr Asn Arg Gly Leu	Thr Pro Arg
690	695	700
Glu Phe Asn Ser Tyr Gly Ser	Arg Arg Gly Asn Asp Ala	Ile Met Ala
705	710	715
Arg Gly Thr Phe Ala Asn Ile	Arg Leu Leu Asn Lys Phe	Leu Asn Lys
725	730	735
Gln Ala Pro Gln Thr Val His	Leu Pro Ser Gly Glu Thr	Leu Asp Val
740	745	750
Phe Asp Ala Ala Glu Arg Tyr	Gln Gln Ala Gly Leu Pro	Leu Ile Val
755	760	765
Leu Ala Gly Lys Glu Tyr Gly	Ser Gly Ser Ser Arg Asp	Trp Ala Ala
770	775	780
Lys Gly Pro Phe Leu Leu Gly	Ile Lys Ala Val Leu Ala	Glu Ser Tyr
785	790	795
Glu Arg Ile His Arg Ser Asn	Leu Val Gly Met Gly Val	Ile Pro Leu
805	810	815

Glu Tyr Leu Pro Gly Glu Thr Ala Asp Ser Leu Gly Leu Thr Gly Arg
 820 825 830
 Glu Arg Tyr Thr Ile Asn Ile Pro Glu Asp Leu Lys Pro Arg Met Thr
 835 840 845
 Val Gln Ile Lys Leu Asp Thr Gly Lys Thr Phe Gln Ala Val Met Arg
 850 855 860
 Phe Asp Thr Asp Val Glu Leu Thr Tyr Phe His Asn Gly Gly Ile Leu
 865 870 875 880
 Asn Tyr Met Ile Arg Lys Met Ala Gln
 885

<210> 313

<211> 416

<212> DNA

<213> Mus musculus

<400> 313

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 cgtcagtaag ccgagacaca gccggcgacg cgggcgccctc accaaacaca ccaagttcgt 180
 gcgggacatg atccgggagg tgtgcggctt cgcaccctac gagcggcgag ccatggagtt 240
 gctcaaagtg tccaaggaca agcgcgcact caagttcatc aagaagaggg tgggcacgca 300
 catccgcgcc aagagaaaagc gggaggagct gagcaacgtg ctggcagcca tgaggaaggc 360
 ggcggaaga aggatgatg aaccctcccc caataaaaga tggttcctac aaaaaa 416

<210> 314

<211> 252

<212> DNA

<213> Mus musculus

<400> 314

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 gatcgtgact cccggcaagg ccattctggc tgcagatgag tccgtaggca gcatggccag 120
 aaggctgagc caaattgcgg ggggagaaca ctgaggagaa tcgccggctg gtaccgcagt 180
 ccgtattcag tgctgatgac cgigtgaaaa agtgcattgg gtgggtcatc ttcttccatg 240
 agagactcta cc 252

<210> 315

<211> 423

<212> DNA

<213> Mus. musculus

<400> 315

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 ctgaatctgt ggacgtgttg atgcccacg ttggtgagat tgtagggtggc tcgatgcgt 180
 cctgggacag tgaggagatt ctggaaggct ataagaggga agggattgac cccgctcctt 240
 actactggta tacagatcag agaaaatatg gcaccctcat ggagggtact ggcttgggct 300
 tggaaacgatt tcttagctgg attctgaaca ggtatcacat ccgagatgtg tgcctgtacc 360
 ctcgatttct ccagcgtgc aggccataac catggggccc tcaagcacga aggaaatgaa 420
 aag 423

<210> 316

<211> 261

<212> DNA

<213> Mus musculus

<400> 316

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gggccaacta cagcgagtgc ctcaagttct accccgagtc taaagagaac aaggatgtgc 120
ccaccggcag caggcgccga ggggctccct gtcgccaga giggaacaac atcgtttgct 180
ggcaattggg ggaacgagtt aaagtgttgg cataacctgt ccccgatacc attaatgact 240
ccaaccacaa ggccattgcc t 261

<210> 317

<211> 414

<212> DNA

<213> Mus musculus

<400> 317

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ggcgtccttc ccggcgctac gcagaacgag ctgaagaagg cataccgaaa gttagccaaa 120
gaataccacc ctgataagaa tccaaatgct ggagacaaa ttaaagaaat aagttttgca 180
tatgaagtat tgtcaaatcc agagaagcga gactgtatga cagatatgga gaacaaggcc 240
tacgggaagg cagcggcgga ggcggtggca tggatgatat cttctcacat atttttgggtg 300
gaggattggt tggctttatg ggcaatcaga gtagaagtcg aaatggcaga agaagaggcg 360
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<210> 318

<211> 414

<212> DNA

<213> Mus musculus

<400> 318

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ggtggataat gaggtgggca ttcagagggg cttctgcaaa cctagagtcc aggaggcaat 180

gggtgcagca gtgaggtagc tatgccacac agagaccata gtcactigtc attttcaagc 240
 ctctattttc ccagctccat ggtgaggaca ccagctttcc caccaccga gtgtcccaga 300
 aaatgaaatt ggaaggaata agatgcatcg tgggtctgga ttgattcttg ggacaaaaa 360
 gagactaggg agagaaagca cattagcagg tcaaccagga ctcatacctt ccag 414

<210> 319

<211> 3031

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (51).. (2348)

<400> 319

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 Met Asn
 1
 gga gaa gcg gac tgt ccc aca gac ctg gaa atg gcc gcc ccc aaa ggc 104
 Gly Glu Ala Asp Cys Pro Thr Asp Leu Glu Met Ala Ala Pro Lys Gly
 5 10 15
 caa gac cgc tgg tcc cag gaa gat atg ctg act ctg ctg gaa tgc atg 152
 Gln Asp Arg Trp Ser Gln Glu Asp Met Leu Thr Leu Leu Glu Cys Met
 20 25 30
 aag aac aac ctc cca tcc aac gac agc tcc aag ttc aaa acc aca gag 200
 Lys Asn Asn Leu Pro Ser Asn Asp Ser Ser Lys Phe Lys Thr Thr Glu
 35 40 45 50
 tcg cac atg gat tgg gaa aaa gtt gcg ttt aag gat ttt tca gga gat 248
 Ser His Met Asp Trp Glu Lys Val Ala Phe Lys Asp Phe Ser Gly Asp

55	60	65	
atg tgc aag ctc aaa tgg gtg gag att tct aac gag gta agg aag ttc	296		
Met Cys Lys Leu Lys Trp Val Glu Ile Ser Asn Glu Val Arg Lys Phe			
70	75	80	
cgt aca ttg aca gaa ttg atc ctc gat gct cag gaa cat gtt aaa aac	344		
Arg Thr Leu Thr Glu Leu Ile Leu Asp Ala Gln Glu His Val Lys Asn			
85	90	95	
cct tac aaa ggc aaa aag ctc aag aaa cac ccg gat ttt cca aag aaa	392		
Pro Tyr Lys Gly Lys Lys Leu Lys Lys His Pro Asp Phe Pro Lys Lys			
100	105	110	
cct ctc acc cct tac ttc cgc ttc ttc atg gag aag cgg gcc aag tac	440		
Pro Leu Thr Pro Tyr Phe Arg Phe Phe Met Glu Lys Arg Ala Lys Tyr			
115	120	125	130
gcg aag ctc cac ccg gag atg agc aac ctg gac ctg act aag atc ctg	488		
Ala Lys Leu His Pro Glu Met Ser Asn Leu Asp Leu Thr Lys Ile Leu			
135	140	145	
tct aag aaa tac aag gaa ctt cca gag aag aag aag atg aaa tat att	536		
Ser Lys Lys Tyr Lys Glu Leu Pro Glu Lys Lys Lys Met Lys Tyr Ile			
150	155	160	
cag gac ttc cag agg gag aaa cag gag ttc gag cga aac ctg gcc cga	584		
Gln Asp Phe Gln Arg Glu Lys Gln Glu Phe Glu Arg Asn Leu Ala Arg			
165	170	175	
ttc agg gag gat cac cct gac ctt atc cag aat gcc aag aag tcg gac	632		
Phe Arg Glu Asp His Pro Asp Leu Ile Gln Asn Ala Lys Lys Ser Asp			
180	185	190	
atc ccc gag aaa ccc aaa act ccc cag caa ctg tgg tac acc cac gag	680		
Ile Pro Glu Lys Pro Lys Thr Pro Gln Gln Leu Trp Tyr Thr His Glu			
195	200	205	210
aag aag gtg tat ctc aaa gtg cgg ccg gat gcc act acg aag gag gtg	728		

Lys Lys Val Tyr Leu Lys Val Arg Pro Asp Ala Thr Thr Lys Glu Val
 215 220 225
 aag gac tcc ctg ggg aag cag tgg tct cag ctc tcg gac aaa aag acg 776
 Lys Asp Ser Leu Gly Lys Gln Trp Ser Gln Leu Ser Asp Lys Lys Thr
 230 235 240
 ctg aaa tgg att cat aag gcc ctg gag cag cgg aag gag tac gag gag 824
 Leu Lys Trp Ile His Lys Ala Leu Glu Gln Arg Lys Glu Tyr Glu Glu
 245 250 255
 att atg cgg gac tat atc cag aag cac cct gag ctg aac atc agt gag 872
 Ile Met Arg Asp Tyr Ile Gln Lys His Pro Glu Leu Asn Ile Ser Glu
 260 265 270
 gaa ggc atc acc aag tcc acc ctc acc aag gcc gag cgc cag ctc aag 920
 Glu Gly Ile Thr Lys Ser Thr Leu Thr Lys Ala Glu Arg Gln Leu Lys
 275 280 285 290
 gac aag ttc gat ggg cga cct acc aag ccg cct ccg aac agc tac tcc 968
 Asp Lys Phe Asp Gly Arg Pro Thr Lys Pro Pro Pro Asn Ser Tyr Ser
 295 300 305
 ctg tac tgt gcg gag ctc atg gcc aac atg aag gat gtg ccc agc aca 1016
 Leu Tyr Cys Ala Glu Leu Met Ala Asn Met Lys Asp Val Pro Ser Thr
 310 315 320
 gag cgc atg gtg cta tgc agc cag caa tgg aag ctg ctc tct cag aag 1064
 Glu Arg Met Val Leu Cys Ser Gln Gln Trp Lys Leu Leu Ser Gln Lys
 325 330 335
 gag aag gat gcc tat cac aag aaa tgt gac cag aaa aag aaa gat tat 1112
 Glu Lys Asp Ala Tyr His Lys Lys Cys Asp Gln Lys Lys Lys Asp Tyr
 340 345 350
 gag gta gag ctg ctg cgg ttc ctt gag agc ttg ccg gag gaa gag cag 1160
 Glu Val Glu Leu Leu Arg Phe Leu Glu Ser Leu Pro Glu Glu Glu Gln
 355 360 365 370

cag cgg gtt ctg ggg gag gag aag atg ctg aac atc aat aag aag caa	1208
Gln Arg Val Leu Gly Glu Glu Lys Met Leu Asn Ile Asn Lys Lys Gln	
375 380 385	
acc acc agt ccg gcc tcc aag aag cct tca cag gaa ggt ggc aag ggt	1256
Thr Thr Ser Pro Ala Ser Lys Lys Pro Ser Gln Glu Gly Gly Lys Gly	
390 395 400	
ggc tcc gag aag ccc aag cgg cct gtg tct gct atg ttc atc ttc tct	1304
Gly Ser Glu Lys Pro Lys Arg Pro Val Ser Ala Met Phe Ile Phe Ser	
405 410 415	
gag gag aag cga agg cag cta cag gag gaa cga cct gag ctc tcc gaa	1352
Glu Glu Lys Arg Arg Gln Leu Gln Glu Glu Arg Pro Glu Leu Ser Glu	
420 425 430	
agc gaa ctg acc cgc ctt ctg gcc cgc atg tgg aac gac ttg acc gag	1400
Ser Glu Leu Thr Arg Leu Leu Ala Arg Met Trp Asn Asp Leu Thr Glu	
435 440 445 450	
aag aag aag gct aaa tac aag gcc cgg gag gct gca ctg aag gcg cag	1448
Lys Lys Lys Ala Lys Tyr Lys Ala Arg Glu Ala Ala Leu Lys Ala Gln	
455 460 465	
tct gag agg aag ccg ggc ggg gag cgt gaa gat agg ggc aag ctg ccg	1496
Ser Glu Arg Lys Pro Gly Gly Glu Arg Glu Asp Arg Gly Lys Leu Pro	
470 475 480	
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Glu Ser Pro Lys Arg Ala Glu Glu Ile Trp Gln Gln Ser Val Ile Gly	
485 490 495	
gac tat ctg gcc cgc ttc aag aat gac cgg gtg aaa gcc ttg aaa gcc	1592
Asp Tyr Leu Ala Arg Phe Lys Asn Asp Arg Val Lys Ala Leu Lys Ala	
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Met Glu Met Thr Trp Asn Asn Met Glu Lys Lys Glu Lys Leu Met Trp	

515	520	525	530	
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535	540	545		
gag atg cgg gcc cct cca gct gct aca aac tct tcc aag aag atg aag	1736			
Glu Met Arg Ala Pro Pro Ala Ala Thr Asn Ser Ser Lys Lys Met Lys				
550	555	560		
ttc cag gga gaa ccc aag aaa cct cct atg aac ggt tac cag aag ttc	1784			
Phe Gln Gly Glu Pro Lys Lys Pro Pro Met Asn Gly Tyr Gln Lys Phe				
565	570	575		
tcc cag gag ctg ctg tcc aat ggg gag cta aat cac ctg ccg ctg aag	1832			
Ser Gln Glu Leu Leu Ser Asn Gly Glu Leu Asn His Leu Pro Leu Lys				
580	585	590		
gag cgc atg gtg gag att ggc agc cgc tgg cag cgc atc tcc cag agc	1880			
Glu Arg Met Val Glu Ile Gly Ser Arg Trp Gln Arg Ile Ser Gln Ser				
595	600	605	610	
cag aag gag cac tat aag aag ctg gcg gag gag caa cag agg cag tac	1928			
Gln Lys Glu His Tyr Lys Lys Leu Ala Glu Glu Gln Gln Arg Gln Tyr				
615	620	625		
aag gtg cac ttg gac ctc tgg gtc aag agc ctg tct ccc cag gac cgc	1976			
Lys Val His Leu Asp Leu Trp Val Lys Ser Leu Ser Pro Gln Asp Arg				
630	635	640		
gca gca tac aaa gaa tac atc tcc aat aaa cgt aag aac atg acc aag	2024			
Ala Ala Tyr Lys Glu Tyr Ile Ser Asn Lys Arg Lys Asn Met Thr Lys				
645	650	655		
ctc cga ggc cca aac ccc aag tct agc cgg acc acc ctg cag tcc aag	2072			
Leu Arg Gly Pro Asn Pro Lys Ser Ser Arg Thr Thr Leu Gln Ser Lys				
660	665	670		
tcg gag tcc gag gag gat gac gat gag gag gag gag gac gac gag gag	2120			

Ser Glu Ser Glu Glu Asp Asp Asp Glu Glu Glu Glu Asp Asp Glu Glu
 675 680 685 690
 gag gag gag gaa gag gaa gat gat gag aac ggt gac tct tct gag gat 2168
 Glu Glu Glu Glu Glu Glu Asp Asp Glu Asn Gly Asp Ser Ser Glu Asp
 695 700 705
 ggc ggc gac tct tct gag tcc agc agt gaa gat gaa agc gag gat ggc 2216
 Gly Gly Asp Ser Ser Glu Ser Ser Ser Glu Asp Glu Ser Glu Asp Gly
 710 715 720
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 Asp Glu Asn Asp Asp Asp Asp Asp Asp Glu Asp Asp Glu Asp Asp Asp
 725 730 735
 gat gag gat gaa gac aac gag tct gag ggc agt agc tcc agc tct tca 2312
 Asp Glu Asp Glu Asp Asn Glu Ser Glu Gly Ser Ser Ser Ser Ser Ser
 740 745 750
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 Ser Ser Gly Asp Ser Ser Asp Ser Gly Ser Asn
 755 760 765
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<210> 320

<211> 765

<212> PRT

<213> Mus musculus

<400> 320

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Cys Met Lys Asn Asn Leu Pro Ser Asn Asp Ser Ser Lys Phe Lys Thr
              35              40              45
Thr Glu Ser His Met Asp Trp Glu Lys Val Ala Phe Lys Asp Phe Ser
              50              55              60
Gly Asp Met Cys Lys Leu Lys Trp Val Glu Ile Ser Asn Glu Val Arg
  65              70              75              80
Lys Phe Arg Thr Leu Thr Glu Leu Ile Leu Asp Ala Gln Glu His Val
              85              90              95
Lys Asn Pro Tyr Lys Gly Lys Lys Leu Lys Lys His Pro Asp Phe Pro
              100             105             110
Lys Lys Pro Leu Thr Pro Tyr Phe Arg Phe Phe Met Glu Lys Arg Ala
              115             120             125
Lys Tyr Ala Lys Leu His Pro Glu Met Ser Asn Leu Asp Leu Thr Lys
              130             135             140
Ile Leu Ser Lys Lys Tyr Lys Glu Leu Pro Glu Lys Lys Lys Met Lys
  145             150             155             160
Tyr Ile Gln Asp Phe Gln Arg Glu Lys Gln Glu Phe Glu Arg Asn Leu
              165             170             175

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 Ser Asp Ile Pro Glu Lys Pro Lys Thr Pro Gln Gln Leu Trp Tyr Thr
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 His Glu Lys Lys Val Tyr Leu Lys Val Arg Pro Asp Ala Thr Thr Lys
 210 215 220
 Glu Val Lys Asp Ser Leu Gly Lys Gln Trp Ser Gln Leu Ser Asp Lys
 225 230 235 240
 Lys Thr Leu Lys Trp Ile His Lys Ala Leu Glu Gln Arg Lys Glu Tyr
 245 250 255
 Glu Glu Ile Met Arg Asp Tyr Ile Gln Lys His Pro Glu Leu Asn Ile
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 Ser Glu Glu Gly Ile Thr Lys Ser Thr Leu Thr Lys Ala Glu Arg Gln
 275 280 285
 Leu Lys Asp Lys Phe Asp Gly Arg Pro Thr Lys Pro Pro Pro Asn Ser
 290 295 300
 Tyr Ser Leu Tyr Cys Ala Glu Leu Met Ala Asn Met Lys Asp Val Pro
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 Ser Thr Glu Arg Met Val Leu Cys Ser Gln Gln Trp Lys Leu Leu Ser
 325 330 335
 Gln Lys Glu Lys Asp Ala Tyr His Lys Lys Cys Asp Gln Lys Lys Lys
 340 345 350
 Asp Tyr Glu Val Glu Leu Leu Arg Phe Leu Glu Ser Leu Pro Glu Glu
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 Glu Gln Gln Arg Val Leu Gly Glu Glu Lys Met Leu Asn Ile Asn Lys
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 385 390 395 400
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Thr Glu Lys Lys Lys Ala Lys Tyr Lys Ala Arg Glu Ala Ala Leu Lys		
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Ala Gln Ser Glu Arg Lys Pro Gly Gly Glu Arg Glu Asp Arg Gly Lys		
465	470	475
Leu Pro Glu Ser Pro Lys Arg Ala Glu Glu Ile Trp Gln Gln Ser Val		
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Ile Gly Asp Tyr Leu Ala Arg Phe Lys Asn Asp Arg Val Lys Ala Leu		
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Lys Ala Met Glu Met Thr Trp Asn Asn Met Glu Lys Lys Glu Lys Leu		
515	520	525
Met Trp Ile Lys Lys Ala Ala Glu Asp Gln Lys Arg Tyr Glu Arg Glu		
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Met Lys Phe Gln Gly Glu Pro Lys Lys Pro Pro Met Asn Gly Tyr Gln		
565	570	575
Lys Phe Ser Gln Glu Leu Leu Ser Asn Gly Glu Leu Asn His Leu Pro		
580	585	590
Leu Lys Glu Arg Met Val Glu Ile Gly Ser Arg Trp Gln Arg Ile Ser		
595	600	605
Gln Ser Gln Lys Glu His Tyr Lys Lys Leu Ala Glu Glu Gln Gln Arg		
610	615	620
Gln Tyr Lys Val His Leu Asp Leu Trp Val Lys Ser Leu Ser Pro Gln		
625	630	635
		640

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 645 650 655
 Thr Lys Leu Arg Gly Pro Asn Pro Lys Ser Ser Arg Thr Thr Leu Gln
 660 665 670
 Ser Lys Ser Glu Ser Glu Glu Asp Asp Asp Glu Glu Glu Glu Asp Asp
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<210> 321

<211> 4479

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (94).. (3057)

<400> 321

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Met Glu Leu Arg Ala Leu Leu																
1								5								
tgc	tgg	gct	tcc	ctc	gcc	act	gct	tta	gaa	gag	acc	ctg	tig	aac	aca	162
Cys	Trp	Ala	Ser	Leu	Ala	Thr	Ala	Leu	Glu	Glu	Thr	Leu	Leu	Asn	Thr	
10				15				20								
aaa	ctg	gaa	acg	gcg	gat	ctg	aaa	tgg	gtg	act	tac	cct	cag	gca	gag	210
Lys	Leu	Glu	Thr	Ala	Asp	Leu	Lys	Trp	Val	Thr	Tyr	Pro	Gln	Ala	Glu	
25				30				35								
ggc	cag	tgg	gag	gag	cta	agc	ggc	ctg	gat	gag	gaa	cag	cac	agc	gtc	258
Gly	Gln	Trp	Glu	Glu	Leu	Ser	Gly	Leu	Asp	Glu	Glu	Gln	His	Ser	Val	
40				45				50				55				
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Arg	Thr	Tyr	Glu	Val	Cys	Asp	Met	Lys	Arg	Pro	Gly	Gly	Gln	Ala	His	
60				65				70								
tgg	ctg	cgc	act	ggc	tgg	gtc	cca	agg	cga	ggt	gct	gtc	cac	gtg	tat	354
Trp	Leu	Arg	Thr	Gly	Trp	Val	Pro	Arg	Arg	Gly	Ala	Val	His	Val	Tyr	
75				80				85								
gcc	acg	ata	cgc	ttc	acc	atg	atg	gaa	tgc	ctg	tcc	ctg	ccg	agg	gcc	402
Ala	Thr	Ile	Arg	Phe	Thr	Met	Met	Glu	Cys	Leu	Ser	Leu	Pro	Arg	Ala	
90				95				100								
agt	cgc	tcc	tgc	aag	gag	aca	ttc	act	gtc	ttc	tat	tac	gag	agc	gaa	450
Ser	Arg	Ser	Cys	Lys	Glu	Thr	Phe	Thr	Val	Phe	Tyr	Tyr	Glu	Ser	Glu	
105				110				115								
cgt	gat	acg	gcc	acg	gcc	cat	acg	ccc	gcc	tgg	atg	gag	aac	ccc	tac	498
Arg	Asp	Thr	Ala	Thr	Ala	His	Thr	Pro	Ala	Trp	Met	Glu	Asn	Pro	Tyr	
120				125				130				135				
atc	aag	gtg	gac	aca	gtg	gcc	gca	gaa	cat	ctg	act	cgg	aag	cgc	cct	546
Ile	Lys	Val	Asp	Thr	Val	Ala	Ala	Glu	His	Leu	Thr	Arg	Lys	Arg	Pro	
140				145				150								

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 Gly Ala Glu Ala Thr Gly Lys Val Asn Ile Lys Thr Leu Arg Leu Gly
 155 160 165
 cct ctc agc aaa gct ggc ttc tac ctg gct ttc cag gac caa gga gcc 642
 Pro Leu Ser Lys Ala Gly Phe Tyr Leu Ala Phe Gln Asp Gln Gly Ala
 170 175 180
 tgc atg gct ctg ctc tcc ctg cat ctc ttt tac aag aag tgc tcc tgg 690
 Cys Met Ala Leu Leu Ser Leu His Leu Phe Tyr Lys Lys Cys Ser Trp
 185 190 195
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 Val Val Pro Val Ala Gly Ser Cys Val Ala Asn Ala Val Pro Thr Ala
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 aac ccc agc ccc agc ctc tac tgc cgg gaa gat ggt caa tgg gct gag 834
 Asn Pro Ser Pro Ser Leu Tyr Cys Arg Glu Asp Gly Gln Trp Ala Glu
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 cag cag gtc acg ggc tgc agc tgc gcg cca ggg tac gag gct gcg gaa 882
 Gln Gln Val Thr Gly Cys Ser Cys Ala Pro Gly Tyr Glu Ala Ala Glu
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 agc aac aaa gta tgc aga gcc tgt ggc cag gga acc ttc aag ccc caa 930
 Ser Asn Lys Val Cys Arg Ala Cys Gly Gln Gly Thr Phe Lys Pro Gln
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 ata gga gac gag tcc tgc ctg ccg tgc cca gcc aac agc cac tcg aat 978
 Ile Gly Asp Glu Ser Cys Leu Pro Cys Pro Ala Asn Ser His Ser Asn
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 Asn Ile Gly Ser Pro Val Cys Leu Cys Arg Ile Gly Tyr Tyr Arg Ala

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Ser Ala Pro Leu Glu Ser Gly Gly Arg Glu Asp Leu Thr Tyr Ala Val			
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Arg Cys Arg Glu Cys Arg Pro Gly Gly Ser Cys Leu Pro Cys Gly Gly			
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Asp Met Thr Phe Asp Pro Gly Pro Arg Asp Leu Val Glu Pro Trp Val			
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gca atc cga ggg ctg cgt cct gat gtc acc tat acc ttt gag gtt gct	1314		
Ala Ile Arg Gly Leu Arg Pro Asp Val Thr Tyr Thr Phe Glu Val Ala			
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Ala Leu Asn Gly Val Ser Thr Leu Ala Thr Gly Pro Pro Pro Phe Glu			
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Pro Val Asn Val Thr Thr Asp Arg Glu Val Pro Pro Ala Val Ser Asp			
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atc cga gtg act cgg tgc tca ccc agc agc ttg atc ctg tca tgg gct	1458		
Ile Arg Val Thr Arg Ser Ser Pro Ser Ser Leu Ile Leu Ser Trp Ala			
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atc ccc aga gca ccc agt ggg gcc gtg ctg gac tac gag gtc aag tat	1506		

Ile Pro Arg Ala Pro Ser Gly Ala Val Leu Asp Tyr Glu Val Lys Tyr
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 His Glu Lys Gly Ala Glu Gly Pro Ser Ser Val Arg Phe Leu Lys Thr
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 Ser Glu Asn Arg Ala Glu Leu Arg Gly Leu Lys Arg Gly Ala Ser Tyr
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Met Arg Tyr Leu Ala Glu Met Ser Tyr Val His Arg Asp Leu Ala Ala
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Ile Val Met Trp Glu Val Met Ser Phe Gly Glu Arg Pro Tyr Trp Asp				
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Met Ser Asn Gln Asp Val Ile Asn Ala Ile Glu Gln Asp Tyr Arg Leu				
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Cys Trp Gln Lys Asp Arg Asn Ala Arg Pro Arg Phe Pro Gln Val Val				
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Ser Ala Leu Asp Lys Met Ile Arg Asn Pro Ala Ser Leu Lys Ile Val				
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gcc agg gag aat ggc ggg gcc tca cat cca ctc ttg gac caa cgg cag	2802			
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cct cac tac tct gct ttc ggt tct gtg ggc gag tgg ctt cga gcc atc	2850			
Pro His Tyr Ser Ala Phe Gly Ser Val Gly Glu Trp Leu Arg Ala Ile				
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<212> PRT

<213> Mus musculus

<400> 322

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Val	Thr	Tyr	Pro	Gln	Ala	Glu	Gly	Gln	Trp	Glu	Glu	Leu	Ser	Gly	Leu
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Asp	Glu	Glu	Gln	His	Ser	Val	Arg	Thr	Tyr	Glu	Val	Cys	Asp	Met	Lys
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Arg	Pro	Gly	Gly	Gln	Ala	His	Trp	Leu	Arg	Thr	Gly	Trp	Val	Pro	Arg
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Arg	Gly	Ala	Val	His	Val	Tyr	Ala	Thr	Ile	Arg	Phe	Thr	Met	Met	Glu
				85					90					95	
Cys	Leu	Ser	Leu	Pro	Arg	Ala	Ser	Arg	Ser	Cys	Lys	Glu	Thr	Phe	Thr

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Val Phe Tyr Tyr Glu Ser Glu Arg Asp Thr Ala Thr Ala His Thr Pro		
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Ala Trp Met Glu Asn Pro Tyr Ile Lys Val Asp Thr Val Ala Ala Glu		
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His Leu Thr Arg Lys Arg Pro Gly Ala Glu Ala Thr Gly Lys Val Asn		
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Ile Lys Thr Leu Arg Leu Gly Pro Leu Ser Lys Ala Gly Phe Tyr Leu		
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Ala Phe Gln Asp Gln Gly Ala Cys Met Ala Leu Leu Ser Leu His Leu		
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Phe Tyr Lys Lys Cys Ser Trp Leu Ile Thr Asn Leu Thr Tyr Phe Pro		
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Glu Thr Val Pro Arg Glu Leu Val Val Pro Val Ala Gly Ser Cys Val		
210	215	220
Ala Asn Ala Val Pro Thr Ala Asn Pro Ser Pro Ser Leu Tyr Cys Arg		
225	230	235
Glu Asp Gly Gln Trp Ala Glu Gln Gln Val Thr Gly Cys Ser Cys Ala		
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Pro Gly Tyr Glu Ala Ala Glu Ser Asn Lys Val Cys Arg Ala Cys Gly		
260	265	270
Gln Gly Thr Phe Lys Pro Gln Ile Gly Asp Glu Ser Cys Leu Pro Cys		
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Pro Ala Asn Ser His Ser Asn Asn Ile Gly Ser Pro Val Cys Leu Cys		
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Arg Ile Gly Tyr Tyr Arg Ala Arg Ser Asp Pro Arg Ser Ser Pro Cys		
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Thr Thr Pro Pro Ser Ala Pro Arg Ser Val Val His His Leu Asn Gly		
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Ser Thr Leu Arg Leu Glu Trp Ser Ala Pro Leu Glu Ser Gly Gly Arg
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 Glu Asp Leu Thr Tyr Ala Val Arg Cys Arg Glu Cys Arg Pro Gly Gly
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 Leu Lys Arg Gly Ala Ser Tyr Leu Val Gln Val Arg Ala Arg Ser Glu
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 Ala Gly Tyr Gly Pro Phe Gly Gln Glu His His Ser Gln Thr Gln Leu
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Pro Phe Thr Tyr Glu Asp Pro Asn Glu Ala Val Arg Glu Phe Ala Lys					
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Glu Ile Asp Val Ser Tyr Val Lys Ile Glu Glu Val Ile Gly Ala Gly					
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Glu Phe Gly Glu Val Cys Arg Gly Arg Leu Lys Ala Pro Gly Lys Lys					
625		630		635	640
Glu Ser Cys Val Ala Ile Lys Thr Leu Lys Gly Gly Tyr Thr Glu Arg					
	645		650		655
Gln Arg Arg Glu Phe Leu Ser Glu Ala Ser Ile Met Gly Gln Phe Glu					
	660		665		670
His Pro Asn Ile Ile Arg Leu Glu Gly Val Val Thr Asn Ser Val Pro					
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Val Met Ile Leu Thr Glu Phe Met Glu Asn Gly Ala Leu Asp Ser Phe					
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Leu Arg Leu Asn Asp Gly Gln Phe Thr Val Ile Gln Leu Val Gly Met					
705		710		715	720
Leu Arg Gly Ile Ala Ser Gly Met Arg Tyr Leu Ala Glu Met Ser Tyr					
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Val His Arg Asp Leu Ala Ala Arg Asn Ile Leu Val Asn Ser Asn Leu					
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Val Cys Lys Val Ser Asp Phe Gly Leu Ser Arg Phe Leu Glu Glu Asn					
	755		760		765
Ser Ser Asp Pro Thr Tyr Thr Ser Ser Leu Gly Gly Lys Ile Ser Ile					
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Arg Trp Thr Ala Pro Glu Ala Ile Ala Phe Arg Lys Phe Thr Ser Ala					
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 Gly Glu Arg Pro Tyr Trp Asp Met Ser Asn Gln Asp Val Ile Asn Ala
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 Ile Glu Gln Asp Tyr Arg Leu Pro Pro Pro Asp Cys Pro Thr Ser
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 900 905 910
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<210> 323

<211> 5471

<212> DNA

<213> Mus musculus

<400> 323

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<210> 324

<211> 487

<212> DNA

<213> Mus musculus

<400> 324

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gtcaagtttt gccattttgt cctttgtagg tagtccgctg gacgttgcta taaggcctcc 420
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<210> 325

<211> 431

<212> DNA

<213> Mus musculus

<400> 325

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 tctcctatgc acctcctgtg gattcccttc tctgagtgct cccgggatgg ttctgaagga 180
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 gacgcagccg gcnnitgctg agtgggagct ttccgaagag cacaccctcc tctcaatgag 360
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<210> 326

<211> 2125

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (115).. (1434)

<400> 326

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 Met
 1
 ctt tct aaa cta gca agt ctg cag acc att gct gct ctg cgc cga gga 165
 Leu Ser Lys Leu Ala Ser Leu Gln Thr Ile Ala Ala Leu Arg Arg Gly
 5 10 15
 gtc cac acc tca gtc gcc tct gcc acg tct gtt gcc aca aag aag aca 213
 Val His Thr Ser Val Ala Ser Ala Thr Ser Val Ala Thr Lys Lys Thr

20	25	30	
gag caa ggc cca cca tcc tcc gag tac att ttt gaa cgg gaa tct aaa			261
Glu Gln Gly Pro Pro Ser Ser Glu Tyr Ile Phe Glu Arg Glu Ser Lys			
35	40	45	
tat ggt gca cac aat tac cat cct ttg cct gta gcc ctg gag aga gga			309
Tyr Gly Ala His Asn Tyr His Pro Leu Pro Val Ala Leu Glu Arg Gly			
50	55	60	65
aaa ggc att tat atg tgg gat gtg gaa ggc agg cag tac ttc gat ttc			357
Lys Gly Ile Tyr Met Trp Asp Val Glu Gly Arg Gln Tyr Phe Asp Phe			
70	75	80	
ctg agt gct tat ggt gct gtc agc caa gga cac tgc cac cca aag atc			405
Leu Ser Ala Tyr Gly Ala Val Ser Gln Gly His Cys His Pro Lys Ile			
85	90	95	
ata gat gcc atg aag agt cag gtg gac aag ctg aca tta aca tct cgg			453
Ile Asp Ala Met Lys Ser Gln Val Asp Lys Leu Thr Leu Thr Ser Arg			
100	105	110	
gct ttc tat aac aat gtc ctt ggt gaa tac gag gag tac atc acc aag			501
Ala Phe Tyr Asn Asn Val Leu Gly Glu Tyr Glu Glu Tyr Ile Thr Lys			
115	120	125	
ctt ttc aac tac aac aaa gtt ctc cct atg aat aca gga gtg gag gct			549
Leu Phe Asn Tyr Asn Lys Val Leu Pro Met Asn Thr Gly Val Glu Ala			
130	135	140	145
gga gag act gca tgt aag ctc gct cgt cgt tgg ggc tac acc gtg aaa			597
Gly Glu Thr Ala Cys Lys Leu Ala Arg Arg Trp Gly Tyr Thr Val Lys			
150	155	160	
ggc atc cag aaa tac aaa gca aag att gtt ttt gct gat ggg aac ttt			645
Gly Ile Gln Lys Tyr Lys Ala Lys Ile Val Phe Ala Asp Gly Asn Phe			
165	170	175	
tgg ggt cga aca cia tct gca atc tcc agt tcc aca gat ccg acc agt			693

Trp Gly Arg Thr Leu Ser Ala Ile Ser Ser Ser Thr Asp Pro Thr Ser
 180 185 190
 tat gat ggc ttt gga ccc ttc atg cca ggc ttt gaa acc atc cca tat 741
 Tyr Asp Gly Phe Gly Pro Phe Met Pro Gly Phe Glu Thr Ile Pro Tyr
 195 200 205
 aac gat ctg ccc gca ctg gag cgt gct ctt cag gat cca aat gtt gct 789
 Asn Asp Leu Pro Ala Leu Glu Arg Ala Leu Gln Asp Pro Asn Val Ala
 210 215 220 225
 gcc ttc atg gtg gag ccc atc cag ggt gaa gca ggc gtt atc gtt ccg 837
 Ala Phe Met Val Glu Pro Ile Gln Gly Glu Ala Gly Val Ile Val Pro
 230 235 240
 gat cca gga tac ctg aca gga gtt cgg gaa ctg tgc acc agg cac cag 885
 Asp Pro Gly Tyr Leu Thr Gly Val Arg Glu Leu Cys Thr Arg His Gln
 245 250 255
 gtc ctg ttt att gct gat gaa ata cag aca gga ttg gcc aga act ggt 933
 Val Leu Phe Ile Ala Asp Glu Ile Gln Thr Gly Leu Ala Arg Thr Gly
 260 265 270
 aga tgg ctg gct gtg gat cat gag aat gtc aga cct gat atg gtt ctt 981
 Arg Trp Leu Ala Val Asp His Glu Asn Val Arg Pro Asp Met Val Leu
 275 280 285
 ctt ggg aag gcc ctt tct ggc ggt tta tac cct gtg tct gca gtg ctg 1029
 Leu Gly Lys Ala Leu Ser Gly Gly Leu Tyr Pro Val Ser Ala Val Leu
 290 295 300 305
 tgt gac gat gag ata atg ctg acc att aaa cca ggc gag cac ggc tcc 1077
 Cys Asp Asp Glu Ile Met Leu Thr Ile Lys Pro Gly Glu His Gly Ser
 310 315 320
 aca tac ggc gga aac cca cta ggc tgc cga att gcc att gcg gct ctt 1125
 Thr Tyr Gly Gly Asn Pro Leu Gly Cys Arg Ile Ala Ile Ala Ala Leu
 325 330 335

gag gtt tta gaa gag gag aat ctt gct gag aat gca gac aag atg ggc 1173
 Glu Val Leu Glu Glu Glu Asn Leu Ala Glu Asn Ala Asp Lys Met Gly
 340 345 350
 gct atc ctg agg aag gag ctc atg aag ctg ccc tct gac gtt gtg acc 1221
 Ala Ile Leu Arg Lys Glu Leu Met Lys Leu Pro Ser Asp Val Val Thr
 355 360 365
 tca gtg aga ggg aaa ggg ttg cta aat gcc att gtc atc aga gaa acc 1269
 Ser Val Arg Gly Lys Gly Leu Leu Asn Ala Ile Val Ile Arg Glu Thr
 370 375 380 385
 aaa gac tgt gat gct tgg aag gtg tgc ctg cga ctt cga gat aac ggg 1317
 Lys Asp Cys Asp Ala Trp Lys Val Cys Leu Arg Leu Arg Asp Asn Gly
 390 395 400
 ctt ctg gcc aag cca acc cac ggt gat atc atc agg ctt gcc cct ccc 1365
 Leu Leu Ala Lys Pro Thr His Gly Asp Ile Ile Arg Leu Ala Pro Pro
 405 410 415
 ctt gtg atc aag gag gat gag atc cgg gag tcc gtg gag atc atc aac 1413
 Leu Val Ile Lys Glu Asp Glu Ile Arg Glu Ser Val Glu Ile Ile Asn
 420 425 430
 aag act atc ttg tcc ttc tga gagtaggaac tctggggagc catcttcaga 1464
 Lys Thr Ile Leu Ser Phe
 435 440
 cagggctctt gtgaaactct gcttgcagtg gccagagcct gtctcctgaa aggcatatat 1524
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 aaaatactag tttaaagtaa acitttcatt ggccaacacc agaattgatt atatagattc 1884
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gtatttcttt gaataaagct taatgtttct ttttacgcca acagagtatt ttgtatttcc 2004
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<210> 327

<211> 439

<212> PRT

<213> Mus musculus

<400> 327

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				20					25					30	
Thr	Glu	Gln	Gly	Pro	Pro	Ser	Ser	Glu	Tyr	Ile	Phe	Glu	Arg	Glu	Ser
				35					40					45	
Lys	Tyr	Gly	Ala	His	Asn	Tyr	His	Pro	Leu	Pro	Val	Ala	Leu	Glu	Arg
				50					55					60	
Gly	Lys	Gly	Ile	Tyr	Met	Trp	Asp	Val	Glu	Gly	Arg	Gln	Tyr	Phe	Asp
65				70					75					80	
Phe	Leu	Ser	Ala	Tyr	Gly	Ala	Val	Ser	Gln	Gly	His	Cys	His	Pro	Lys
				85					90					95	
Ile	Ile	Asp	Ala	Met	Lys	Ser	Gln	Val	Asp	Lys	Leu	Thr	Leu	Thr	Ser
				100					105					110	
Arg	Ala	Phe	Tyr	Asn	Asn	Val	Leu	Gly	Glu	Tyr	Glu	Glu	Tyr	Ile	Thr
				115					120					125	
Lys	Leu	Phe	Asn	Tyr	Asn	Lys	Val	Leu	Pro	Met	Asn	Thr	Gly	Val	Glu
130									135					140	

Ala Gly Glu Thr Ala Cys Lys Leu Ala Arg Arg Trp Gly Tyr Thr Val
 145 150 155 160
 Lys Gly Ile Gln Lys Tyr Lys Ala Lys Ile Val Phe Ala Asp Gly Asn
 165 170 175
 Phe Trp Gly Arg Thr Leu Ser Ala Ile Ser Ser Ser Thr Asp Pro Thr
 180 185 190
 Ser Tyr Asp Gly Phe Gly Pro Phe Met Pro Gly Phe Glu Thr Ile Pro
 195 200 205
 Tyr Asn Asp Leu Pro Ala Leu Glu Arg Ala Leu Gln Asp Pro Asn Val
 210 215 220
 Ala Ala Phe Met Val Glu Pro Ile Gln Gly Glu Ala Gly Val Ile Val
 225 230 235 240
 Pro Asp Pro Gly Tyr Leu Thr Gly Val Arg Glu Leu Cys Thr Arg His
 245 250 255
 Gln Val Leu Phe Ile Ala Asp Glu Ile Gln Thr Gly Leu Ala Arg Thr
 260 265 270
 Gly Arg Trp Leu Ala Val Asp His Glu Asn Val Arg Pro Asp Met Val
 275 280 285
 Leu Leu Gly Lys Ala Leu Ser Gly Gly Leu Tyr Pro Val Ser Ala Val
 290 295 300
 Leu Cys Asp Asp Glu Ile Met Leu Thr Ile Lys Pro Gly Glu His Gly
 305 310 315 320
 Ser Thr Tyr Gly Gly Asn Pro Leu Gly Cys Arg Ile Ala Ile Ala Ala
 325 330 335
 Leu Glu Val Leu Glu Glu Glu Asn Leu Ala Glu Asn Ala Asp Lys Met
 340 345 350
 Gly Ala Ile Leu Arg Lys Glu Leu Met Lys Leu Pro Ser Asp Val Val
 355 360 365
 Thr Ser Val Arg Gly Lys Gly Leu Leu Asn Ala Ile Val Ile Arg Glu

370 375 380
 Thr Lys Asp Cys Asp Ala Trp Lys Val Cys Leu Arg Leu Arg Asp Asn
 385 390 395 400
 Gly Leu Leu Ala Lys Pro Thr His Gly Asp Ile Ile Arg Leu Ala Pro
 405 410 415
 Pro Leu Val Ile Lys Glu Asp Glu Ile Arg Glu Ser Val Glu Ile Ile
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 Asn Lys Thr Ile Leu Ser Phe
 435

<210> 328

<211> 407

<212> DNA

<213> Mus musculus

<400> 328

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 cagctatgag gagaaacggt acatctgttg ggaagctcct gactatgaga taagccaatg 180
 gctgtacggt gaaatcaag ctagatctgg acttgccata cctgccctac ctcattggacg 240
 ggaagaacaa gatcagccag actaaccgcc atcctgagat acatcgcatg gaagcacaac 300
 atttgtggtg acactgtacg aggaagagag acgagtagac gtcattggaga agcagatcat 360
 gggctttctg cagtcagctg gttcgccgct gctacaattc tagccac 407

<210> 329

<211> 474

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (16).. (204)

<400> 329

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aaa gac aag acg tca gga gat aat gat ggg cag aag aaa gtc caa gaa 99
Lys Asp Lys Thr Ser Gly Asp Asn Asp Gly Gln Lys Lys Val Gln Glu
              15              20              25
gaa ttt gat atc gac atg gat gca cca gag aca gag cgt gca gct gtg 147
Glu Phe Asp Ile Asp Met Asp Ala Pro Glu Thr Glu Arg Ala Ala Val
              30              35              40
gcc att cag tct cag ttc aga aaa ttc cag aag aaa aag gca gga tca 195
Ala Ile Gln Ser Gln Phe Arg Lys Phe Gln Lys Lys Lys Ala Gly Ser
              45              50              55              60
cag tcc tag iggtgaagct gcttcctggg ccacctgaag acaccaagtt 244
Gln Ser
caaccaccat ccatcaagaa atgaaaagaa caatacccta gagagaagtc atcctcactc 304
aatacacacc ctgctacaaa cctgaaatgc atgaagagaa acctatagta tttatgcccc 364
ctataggcag gtatccacag taaaattgtg agtagcttaa tctgtttatc tccattacaa 424
ttcctctgca actattttcc ttgatgttgt aataaaaagg aggtaagatg 474

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<210> 330

<211> 62

<212> PRT

<213> Mus musculus

<400> 330

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Asp Met Asp Ala Pro Glu Thr Glu Arg Ala Ala Val Ala Ile Gln Ser

35 40 45

Gln Phe Arg Lys Phe Gln Lys Lys Lys Ala Gly Ser Gln Ser

50 55 60

<210> 331

<211> 2244

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (254).. (2164)

<400> 331

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attccgggttg aattttgtcc ctctgcgtc gccccgctc ccttcccccc ggctccgtcc 180

cccggccccg cactcgctct cctcctctca cgggaaaggt cgcggcctgc ggcccgcggg 240

cagccgtgcc gag atg aac ccc agc gcc ccc agc tac ccc atg gcc tct 289

Met Asn Pro Ser Ala Pro Ser Tyr Pro Met Ala Ser

1 5 10

ctg tac gtg ggg gac ctg cac ccc gac gtg acc gag gcg atg ctc tac 337

Leu Tyr Val Gly Asp Leu His Pro Asp Val Thr Glu Ala Met Leu Tyr

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gag aag ttc agc ccg gcc ggg ccc atc ctc tcc atc cgg gtc tgc agg			385
Glu Lys Phe Ser Pro Ala Gly Pro Ile Leu Ser Ile Arg Val Cys Arg			
30	35	40	
gac atg atc acc cgc cgc tcc ttc ggc tac gcg tac gtg aac ttc cag			433
Asp Met Ile Thr Arg Arg Ser Leu Gly Tyr Ala Tyr Val Asn Phe Gln			
45	50	55	60
cag ccg gcg gac gcg gaa cgt gct ttg gac acc atg aat ttt gat gtt			481
Gln Pro Ala Asp Ala Glu Arg Ala Leu Asp Thr Met Asn Phe Asp Val			
65	70	75	
ata aag ggc aag cca gta cgc atc atg tgg tct cag cgt gat cca tca			529
Ile Lys Gly Lys Pro Val Arg Ile Met Trp Ser Gln Arg Asp Pro Ser			
80	85	90	
ctt cgc aaa agt gga gta ggc aac ata ttc att aaa aat ttg gac aaa			577
Leu Arg Lys Ser Gly Val Gly Asn Ile Phe Ile Lys Asn Leu Asp Lys			
95	100	105	
tcc atc gac aat aaa gca cta tat gat acg ttt tct gcg ttt ggt aac			625
Ser Ile Asp Asn Lys Ala Leu Tyr Asp Thr Phe Ser Ala Phe Gly Asn			
110	115	120	
atc ctt tca tgt aag gtg gtt tgt gat gaa aat ggc tcc aag ggc tat			673
Ile Leu Ser Cys Lys Val Val Cys Asp Glu Asn Gly Ser Lys Gly Tyr			
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gga ttt gta cac ttt gaa aca cag gaa gca gct gaa aga gct att gaa			721
Gly Phe Val His Phe Glu Thr Gln Glu Ala Ala Glu Arg Ala Ile Glu			
145	150	155	
aaa atg aat ggg atg ctt cta aat gat cgt aaa gtg ttt gtt gga cga			769
Lys Met Asn Gly Met Leu Leu Asn Asp Arg Lys Val Phe Val Gly Arg			
160	165	170	
ttt aaa tct cag aag gaa cga gaa gca gag ctt gga gcc agg gca aag			817

Phe Lys Ser Gln Lys Glu Arg Glu Ala Glu Leu Gly Ala Arg Ala Lys
 175 180 185
 gag ttc acc aat gtt tac atc aag aac ttt gga gaa gac atg gat gat 865
 Glu Phe Thr Asn Val Tyr Ile Lys Asn Phe Gly Glu Asp Met Asp Asp
 190 195 200
 gag cgc ctt aag gaa ctc ttt ggc aag ttt ggg cct gcc tta agt gtg 913
 Glu Arg Leu Lys Glu Leu Phe Gly Lys Phe Gly Pro Ala Leu Ser Val
 205 210 215 220
 aaa gta atg aca gat gaa agt gga aaa tcc aaa gga ttt gga ttt gta 961
 Lys Val Met Thr Asp Glu Ser Gly Lys Ser Lys Gly Phe Gly Phe Val
 225 230 235
 agc ttt gaa agg cat gaa gat gcg cag aaa gct gtg gat gag atg aat 1009
 Ser Phe Glu Arg His Glu Asp Ala Gln Lys Ala Val Asp Glu Met Asn
 240 245 250
 ggg aag gag ctc aat gga aaa cag att tat gtt gga cga gct cag aaa 1057
 Gly Lys Glu Leu Asn Gly Lys Gln Ile Tyr Val Gly Arg Ala Gln Lys
 255 260 265
 aaa gtg gaa cgg cag acg gaa ctt aag cgc aaa ttt gag cag atg aag 1105
 Lys Val Glu Arg Gln Thr Glu Leu Lys Arg Lys Phe Glu Gln Met Lys
 270 275 280
 caa gat agg atc acc aga tat cag ggt gtg aac ctt tat gtg aaa aat 1153
 Gln Asp Arg Ile Thr Arg Tyr Gln Gly Val Asn Leu Tyr Val Lys Asn
 285 290 295 300
 ctt gat gac ggg att gat gat gag cgt ctc cgg aag gag ttt tct ccg 1201
 Leu Asp Asp Gly Ile Asp Asp Glu Arg Leu Arg Lys Glu Phe Ser Pro
 305 310 315
 ttt ggt aca atc acc agt gca aaa gta atg atg gag ggt ggg cgc agc 1249
 Phe Gly Thr Ile Thr Ser Ala Lys Val Met Met Glu Gly Gly Arg Ser
 320 325 330

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Lys Gly Phe Gly Phe Val Cys Phe Ser Ser Pro Glu Glu Ala Thr Lys
      335              340              345

gca gtt aca gag atg aat ggt aga att gtg gcc acg aag cca ctg tat 1345
Ala Val Thr Glu Met Asn Gly Arg Ile Val Ala Thr Lys Pro Leu Tyr
      350              355              360

gta gct tta gct cag cgc aaa gaa gag cgc cag gct cac ctc act aac 1393
Val Ala Leu Ala Gln Arg Lys Glu Glu Arg Gln Ala His Leu Thr Asn
      365              370              375              380

cag tat atg cag agg atg gca agt gta cga gct gtg ccc aac ccc gtg 1441
Gln Tyr Met Gln Arg Met Ala Ser Val Arg Ala Val Pro Asn Pro Val
      385              390              395

atc aac ccc tac cag cca gca cct cct tca ggt tac ttc atg gca gct 1489
Ile Asn Pro Tyr Gln Pro Ala Pro Pro Ser Gly Tyr Phe Met Ala Ala
      400              405              410

atc cca cag act cag aac cgt gct gca tac tat cct cct agc caa att 1537
Ile Pro Gln Thr Gln Asn Arg Ala Ala Tyr Tyr Pro Pro Ser Gln Ile
      415              420              425

gct caa cta aga cca agt cct cgc tgg act gct cag ggt gcc aga cct 1585
Ala Gln Leu Arg Pro Ser Pro Arg Trp Thr Ala Gln Gly Ala Arg Pro
      430              435              440

cat cca ttc cag aat atg ccc ggt gct atc cgc cca gct gct cct aga 1633
His Pro Phe Gln Asn Met Pro Gly Ala Ile Arg Pro Ala Ala Pro Arg
      445              450              455              460

cca cca ttt agt acg atg aga cca gct tcc tca cag gtt cca cga gtc 1681
Pro Pro Phe Ser Thr Met Arg Pro Ala Ser Ser Gln Val Pro Arg Val
      465              470              475

atg tca aca cag cgt gtt gct aac aca tca aca cag aca atg ggt cca 1729
Met Ser Thr Gln Arg Val Ala Asn Thr Ser Thr Gln Thr Met Gly Pro

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Arg Pro Ala Ala Ala Ala Ala Ala Ala Thr Pro Ala Val Arg Thr Val			
495	500	505	
ccc cag tat aaa tat gct gcg gga gtc cgc aat ccc cag caa cat ctt	1825		
Pro Gln Tyr Lys Tyr Ala Ala Gly Val Arg Asn Pro Gln Gln His Leu			
510	515	520	
aat gca cag cca caa gtt acc atg caa cag cct gct gtt cat gtg caa	1873		
Asn Ala Gln Pro Gln Val Thr Met Gln Gln Pro Ala Val His Val Gln			
525	530	535	540
ggt caa gaa cct tta act gct tcc atg ttg gca tct gcg ccc ccg caa	1921		
Gly Gln Glu Pro Leu Thr Ala Ser Met Leu Ala Ser Ala Pro Pro Gln			
545	550	555	
gag cag aag caa atg ttg ggt gaa cgg ctg ttt cct ctt atc caa gcc	1969		
Glu Gln Lys Gln Met Leu Gly Glu Arg Leu Phe Pro Leu Ile Gln Ala			
560	565	570	
atg cac cct tct ctt gct ggt aaa atc act ggc atg ctg ttg gag att	2017		
Met His Pro Ser Leu Ala Gly Lys Ile Thr Gly Met Leu Leu Glu Ile			
575	580	585	
gat aac tca gaa tta ctt cac atg ctc gag tct cca gag tct ctc cgc	2065		
Asp Asn Ser Glu Leu Leu His Met Leu Glu Ser Pro Glu Ser Leu Arg			
590	595	600	
tca aag gtt gat gaa gct gta gct gta cta caa gcc cac caa gcg aaa	2113		
Ser Lys Val Asp Glu Ala Val Ala Val Leu Gln Ala His Gln Ala Lys			
605	610	615	620
gag gct gcc cag aaa gca gtg aac agt gcc act ggt gtt cca act gtc	2161		
Glu Ala Ala Gln Lys Ala Val Asn Ser Ala Thr Gly Val Pro Thr Val			
625	630	635	
taa attgatcagg gaccacgaac agaaactcgt gcttcaccga agaaaaatat	2214		

cttaaaccatc gaaaaattta aatattatga

2244

<210> 332

<211> 636

<212> PRT

<213> Mus musculus

<400> 332

Met Asn Pro Ser Ala Pro Ser Tyr Pro Met Ala Ser Leu Tyr Val Gly
1 5 10 15
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20 25 30
Pro Ala Gly Pro Ile Leu Ser Ile Arg Val Cys Arg Asp Met Ile Thr
35 40 45
Arg Arg Ser Leu Gly Tyr Ala Tyr Val Asn Phe Gln Gln Pro Ala Asp
50 55 60
Ala Glu Arg Ala Leu Asp Thr Met Asn Phe Asp Val Ile Lys Gly Lys
65 70 75 80
Pro Val Arg Ile Met Trp Ser Gln Arg Asp Pro Ser Leu Arg Lys Ser
85 90 95
Gly Val Gly Asn Ile Phe Ile Lys Asn Leu Asp Lys Ser Ile Asp Asn
100 105 110
Lys Ala Leu Tyr Asp Thr Phe Ser Ala Phe Gly Asn Ile Leu Ser Cys
115 120 125
Lys Val Val Cys Asp Glu Asn Gly Ser Lys Gly Tyr Gly Phe Val His
130 135 140
Phe Glu Thr Gln Glu Ala Ala Glu Arg Ala Ile Glu Lys Met Asn Gly
145 150 155 160
Met Leu Leu Asn Asp Arg Lys Val Phe Val Gly Arg Phe Lys Ser Gln

	165		170		175										
Lys	Glu	Arg	Glu	Ala	Glu	Leu	Gly	Ala	Arg	Ala	Lys	Glu	Phe	Thr	Asn
	180		185		190										
Val	Tyr	Ile	Lys	Asn	Phe	Gly	Glu	Asp	Met	Asp	Asp	Glu	Arg	Leu	Lys
	195		200		205										
Glu	Leu	Phe	Gly	Lys	Phe	Gly	Pro	Ala	Leu	Ser	Val	Lys	Val	Met	Thr
	210		215		220										
Asp	Glu	Ser	Gly	Lys	Ser	Lys	Gly	Phe	Gly	Phe	Val	Ser	Phe	Glu	Arg
225			230		235									240	
His	Glu	Asp	Ala	Gln	Lys	Ala	Val	Asp	Glu	Met	Asn	Gly	Lys	Glu	Leu
	245		250		255										
Asn	Gly	Lys	Gln	Ile	Tyr	Val	Gly	Arg	Ala	Gln	Lys	Lys	Val	Glu	Arg
	260		265		270										
Gln	Thr	Glu	Leu	Lys	Arg	Lys	Phe	Glu	Gln	Met	Lys	Gln	Asp	Arg	Ile
	275		280		285										
Thr	Arg	Tyr	Gln	Gly	Val	Asn	Leu	Tyr	Val	Lys	Asn	Leu	Asp	Asp	Gly
	290		295		300										
Ile	Asp	Asp	Glu	Arg	Leu	Arg	Lys	Glu	Phe	Ser	Pro	Phe	Gly	Thr	Ile
305			310		315									320	
Thr	Ser	Ala	Lys	Val	Met	Met	Glu	Gly	Gly	Arg	Ser	Lys	Gly	Phe	Gly
	325		330		335										
Phe	Val	Cys	Phe	Ser	Ser	Pro	Glu	Glu	Ala	Thr	Lys	Ala	Val	Thr	Glu
	340		345		350										
Met	Asn	Gly	Arg	Ile	Val	Ala	Thr	Lys	Pro	Leu	Tyr	Val	Ala	Leu	Ala
	355		360		365										
Gln	Arg	Lys	Glu	Glu	Arg	Gln	Ala	His	Leu	Thr	Asn	Gln	Tyr	Met	Gln
	370		375		380										
Arg	Met	Ala	Ser	Val	Arg	Ala	Val	Pro	Asn	Pro	Val	Ile	Asn	Pro	Tyr
385			390		395									400	

Gln Pro Ala Pro Pro Ser Gly Tyr Phe Met Ala Ala Ile Pro Gln Thr
 405 410 415
 Gln Asn Arg Ala Ala Tyr Tyr Pro Pro Ser Gln Ile Ala Gln Leu Arg
 420 425 430
 Pro Ser Pro Arg Trp Thr Ala Gln Gly Ala Arg Pro His Pro Phe Gln
 435 440 445
 Asn Met Pro Gly Ala Ile Arg Pro Ala Ala Pro Arg Pro Pro Phe Ser
 450 455 460
 Thr Met Arg Pro Ala Ser Ser Gln Val Pro Arg Val Met Ser Thr Gln
 465 470 475 480
 Arg Val Ala Asn Thr Ser Thr Gln Thr Met Gly Pro Arg Pro Ala Ala
 485 490 495
 Ala Ala Ala Ala Ala Thr Pro Ala Val Arg Thr Val Pro Gln Tyr Lys
 500 505 510
 Tyr Ala Ala Gly Val Arg Asn Pro Gln Gln His Leu Asn Ala Gln Pro
 515 520 525
 Gln Val Thr Met Gln Gln Pro Ala Val His Val Gln Gly Gln Glu Pro
 530 535 540
 Leu Thr Ala Ser Met Leu Ala Ser Ala Pro Pro Gln Glu Gln Lys Gln
 545 550 555 560
 Met Leu Gly Glu Arg Leu Phe Pro Leu Ile Gln Ala Met His Pro Ser
 565 570 575
 Leu Ala Gly Lys Ile Thr Gly Met Leu Leu Glu Ile Asp Asn Ser Glu
 580 585 590
 Leu Leu His Met Leu Glu Ser Pro Glu Ser Leu Arg Ser Lys Val Asp
 595 600 605
 Glu Ala Val Ala Val Leu Gln Ala His Gln Ala Lys Glu Ala Ala Gln
 610 615 620
 Lys Ala Val Asn Ser Ala Thr Gly Val Pro Thr Val

625

630

635

<210> 333

<211> 2564

<212> DNA

<213> *Mus musculus*

<400> 333

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cagggtgccaa atgtaggcct tctttctccc cctccctcct gtgtgtgtgt gtgtgtgtct 180
gtctgtctgt ctatctgtct ctccagtggg tttcttttgt taaaatataa agataggccg 240
cttggacaaa gtgaggttcc ttacagctc aatttcattc cttttttcct acaaggcttt 300
aagagatgga gggagagaat atagttcagt cctcttaatt gcaaattcat tctgagattg 360
tttcctagac agatcgctct aagtcctact cgccatacaa aaagttaaag gtgaatgcaa 420
gtccagtaat ctgggtacat tgacaggtag ccaactgagt gtgatgatgt attgctaacc 480
aaggactgag tgatctctgt gtaattaagt gtgctcctat gtggctgaaa tatgggagcg 540
gcatgtcagc actgagtgaa ggtaagattg ttgggtctct gtggcatgga gaatttcattg 600
tgccctgcgtg ggtgcaggct ttttttttct ttttttttaa aaaataaacc actttagatc 660
gtgtcgccct cctcacttc tgtgattgat ttgctgaggg taatgggtgcg taaaagcact 720
ggtgagatct gggggcgccct ccttggctga cgtcagagag agagttttaa aaggggagac 780
cgtggagagc tccatagcgg ctgaaggaga cgctaccgaa gccgtcgtg ctgcctgagg 840
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gtccctgccgt ctccagtgcg ccttggctgc gctctgcatc gtccctggctt tggcggtgt 960
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cttgcaggta agttcctccc tggctttcaa gaaaattcag aaagcaggta ggagagactg 1260

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tgtgttttaa ggagagcac tttctgaaag acttgcgttt gggaagcctt ttttctcct 1560
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gagatgaggg tggagctgca gaggtctgcc aactcgaacc cagcaatggc accccgggaa 1860
cgcaaagctg gctgcaagaa cttcttctgg aagacattca catcctgtta gctttaatat 1920
tgttgtccta gccagacctc tgatccctct cccccaaacc ccatactctt tctttaactc 1980
ctggcccccg atgctcaact tgacctgca ttagaaattg aagactgtaa atacaaaata 2040
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tcagaaatac atgatgagca tgggttgtgg ttccgtaaa catattttag gtgtacatac 2160
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gactgttcct taaaacttg aataactttg aatgtctata aattgaacca tgtatccgaa 2280
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cactgtacta tgctgattca caaacataa aacatattta aaatggaaag aaaataatca 2460
aaaaagtggg aaagaacttg gtttaaagag gtaaaacaaa ctttcagctt ttaaattttg 2520
tttgggttg gtttttgtt tgtttgtgaa catctacctc taga 2564

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<210> 334

<211> 756

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (60).. (482)

<400> 334

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atg gcc ggg tgg aac gcc tac atc gac agc ctt atg gcg gac ggg acc 107
Met Ala Gly Trp Asn Ala Tyr Ile Asp Ser Leu Met Ala Asp Gly Thr
  1           5           10           15
tgt cag gac gcg gcc atc gta ggc tac aag gac tcg ccc tcc gtc tgg 155
Cys Gln Asp Ala Ala Ile Val Gly Tyr Lys Asp Ser Pro Ser Val Trp
          20           25           30
gcc gcc gtc ccc ggg aag acc ttc gtt agc att acg cca gct gag gtt 203
Ala Ala Val Pro Gly Lys Thr Phe Val Ser Ile Thr Pro Ala Glu Val
          35           40           45
ggt gtc cta gta ggc aaa gac cgg tca agt ttt ttc gtc aat ggg ctg 251
Gly Val Leu Val Gly Lys Asp Arg Ser Ser Phe Phe Val Asn Gly Leu
          50           55           60
aca ctt ggg ggc cag aaa tgt tct gtg atc cgg gac tca ctg ctg caa 299
Thr Leu Gly Gly Gln Lys Cys Ser Val Ile Arg Asp Ser Leu Leu Gln
          65           70           75           80
gac ggg gaa ttt aca atg gat ctt cgt acc aag agc acc gga gga gcc 347
Asp Gly Glu Phe Thr Met Asp Leu Arg Thr Lys Ser Thr Gly Gly Ala
          85           90           95
ccc acc ttc aat gtc act gtc acc atg act gcc aag acg cta gtc ctg 395
Pro Thr Phe Asn Val Thr Val Thr Met Thr Ala Lys Thr Leu Val Leu
          100          105          110
ctg atg ggc aaa gaa ggt gtc cac ggt ggt ttg atc aac aag aaa tgt 443
Leu Met Gly Lys Glu Gly Val His Gly Gly Leu Ile Asn Lys Lys Cys
          115          120          125

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tat gaa atg gcc tct cac ctg cgg cgt tcc cag tac tga cctcgtctgt 492
 Tyr Glu Met Ala Ser His Leu Arg Arg Ser Gln Tyr
 130 135 140
 cccttcccc caccgttccc ttiggtttt gcacccccctt ctttccatac acacacatac 552
 cattattttt tgggccatta ccccatitcc cttattgctg ccaaaaccac atgggctggg 612
 ggctggggct ggatggacag acaccitccc ctaccatac cccctcctgt gtgtgtttgg 672
 aaaatttttg tttttgggtt taattttttg ttttttggic tttttttttt ttttttctg 732
 aataaaaaag gattctacta accg 756

<210> 335

<211> 140

<212> PRT

<213> Mus musculus

<400> 335

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 Cys Gln Asp Ala Ala Ile Val Gly Tyr Lys Asp Ser Pro Ser Val Trp
 20 25 30
 Ala Ala Val Pro Gly Lys Thr Phe Val Ser Ile Thr Pro Ala Glu Val
 35 40 45
 Gly Val Leu Val Gly Lys Asp Arg Ser Ser Phe Phe Val Asn Gly Leu
 50 55 60
 Thr Leu Gly Gly Gln Lys Cys Ser Val Ile Arg Asp Ser Leu Leu Gln
 65 70 75 80
 Asp Gly Glu Phe Thr Met Asp Leu Arg Thr Lys Ser Thr Gly Gly Ala
 85 90 95
 Pro Thr Phe Asn Val Thr Val Thr Met Thr Ala Lys Thr Leu Val Leu
 100 105 110

Leu Met Gly Lys Glu Gly Val His Gly Gly Leu Ile Asn Lys Lys Cys

115

120

125

Tyr Glu Met Ala Ser His Leu Arg Arg Ser Gln Tyr

130

135

140

<210> 336

<211> 478

<212> DNA

<213> Mus musculus

<400> 336

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ttccaacagc ctccacttgg ggtacgcaag attgtattgg ccaccaacat tgctgaaacc 120
tccatcacag ttaacgacat tgtacatgtc gtggacagcg gtctgcacaa ggaggaacgc 180
tatgacctga agaccaaggt gtcctgcctg gagacttgtt ggggtgtcgag agcaaatgtc 240
attcagcgcc ggggcagggc aggccgctgc cagtcagggt ttgcctacca ctgttcccg 300
aggagccggc tggagaaaaat ggttcctttc caagtgccag agatcccgcg cacacctctt 360
gagaacctgg tgctgcaacc aaaatccata tgcctgagaa gacggcagig gagttcctct 420
ctaaggctgt ggacagtcca aatatcaagg cagtggatga ggccgtgatc ctgctcca 478

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<210> 337

<211> 1008

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (208).. (846)

<400> 337

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 cgctgccccct cggcctttgc tgctggctct gacggcgacc gacggcgggc ggggcccggg 120
 ttgcgggccg agcggcgccg gtgagggcgc ggaggaggcg cacagcgga ggaggagccg 180
 tgagcctggc acggagcggc cgcggcc atg gcg tac gcc tat ctc ttc aag tac 234

Met Ala Tyr Ala Tyr Leu Phe Lys Tyr

1

5

atc atc atc ggc gac aca ggt gtt gga aaa tcg tgc tta ttg cta cag 282
 Ile Ile Ile Gly Asp Thr Gly Val Gly Lys Ser Cys Leu Leu Leu Gln

10

15

20

25

ttt aca gac aag agg ttt cag ccg gtg cat gac ctc aca att ggt gta 330
 Phe Thr Asp Lys Arg Phe Gln Pro Val His Asp Leu Thr Ile Gly Val

30

35

40

gag ttt ggt gct cgg atg ata acg att gat ggg aaa cag ata aaa ctc 378
 Glu Phe Gly Ala Arg Met Ile Thr Ile Asp Gly Lys Gln Ile Lys Leu

45

50

55

cag atc tgg gat aca gca ggg cag gag tcc ttt cgt tct atc aca cgg 426
 Gln Ile Trp Asp Thr Ala Gly Gln Glu Ser Phe Arg Ser Ile Thr Arg

60

65

70

tca tat tac aga ggt gca gcg ggg gct tta cta gtg tat gat att aca 474
 Ser Tyr Tyr Arg Gly Ala Ala Gly Ala Leu Leu Val Tyr Asp Ile Thr

75

80

85

agg aga gac acg ttc aac cac ttg aca acc tgg tta gaa gat gcc cgt 522
 Arg Arg Asp Thr Phe Asn His Leu Thr Thr Trp Leu Glu Asp Ala Arg

90

95

100

105

cag cat tcc aat tcc aac atg gtc atc atg ctt att gga aat aaa agt 570
 Gln His Ser Asn Ser Asn Met Val Ile Met Leu Ile Gly Asn Lys Ser

110

115

120

gac tta gaa tct agg aga gaa gtg aaa aag gaa gaa ggt gaa gct ttt 618

Asp Leu Glu Ser Arg Arg Glu Val Lys Lys Glu Glu Gly Glu Ala Phe
 125 130 135
 gca cga gag cat gga ctt atc ttc atg gaa act tct gcc aag act gcg 666
 Ala Arg Glu His Gly Leu Ile Phe Met Glu Thr Ser Ala Lys Thr Ala
 140 145 150
 tct aat gta gag gag gca ttt att aac aca gca aaa gaa att tat gaa 714
 Ser Asn Val Glu Glu Ala Phe Ile Asn Thr Ala Lys Glu Ile Tyr Glu
 155 160 165
 aaa atc caa gaa ggg gtc ttt gac att aat aat gag gca aac ggc att 762
 Lys Ile Gln Glu Gly Val Phe Asp Ile Asn Asn Glu Ala Asn Gly Ile
 170 175 180 185
 aaa att ggc cct cag cac gct gct acc aac gca tct cat gga agc aac 810
 Lys Ile Gly Pro Gln His Ala Ala Thr Asn Ala Ser His Gly Ser Asn
 190 195 200
 caa ggc gga cag cag gca ggg gga ggc tgc tgt tga ggctggtgtt 856
 Gln Gly Gly Gln Gln Ala Gly Gly Gly Cys Cys
 205 210
 accggctagc tgcccagttg agccacgcac tctgtcacc tctttcctca tgctcagctg 916
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<210> 338

<211> 212

<212> PRT

<213> Mus musculus

<400> 338

Met Ala Tyr Ala Tyr Leu Phe Lys Tyr Ile Ile Ile Gly Asp Thr Gly

1

5

10

15

Val Gly Lys Ser Cys Leu Leu Leu Gln Phe Thr Asp Lys Arg Phe Gln
 20 25 30
 Pro Val His Asp Leu Thr Ile Gly Val Glu Phe Gly Ala Arg Met Ile
 35 40 45
 Thr Ile Asp Gly Lys Gln Ile Lys Leu Gln Ile Trp Asp Thr Ala Gly
 50 55 60
 Gln Glu Ser Phe Arg Ser Ile Thr Arg Ser Tyr Tyr Arg Gly Ala Ala
 65 70 75 80
 Gly Ala Leu Leu Val Tyr Asp Ile Thr Arg Arg Asp Thr Phe Asn His
 85 90 95
 Leu Thr Thr Trp Leu Glu Asp Ala Arg Gln His Ser Asn Ser Asn Met
 100 105 110
 Val Ile Met Leu Ile Gly Asn Lys Ser Asp Leu Glu Ser Arg Arg Glu
 115 120 125
 Val Lys Lys Glu Glu Gly Glu Ala Phe Ala Arg Glu His Gly Leu Ile
 130 135 140
 Phe Met Glu Thr Ser Ala Lys Thr Ala Ser Asn Val Glu Glu Ala Phe
 145 150 155 160
 Ile Asn Thr Ala Lys Glu Ile Tyr Glu Lys Ile Gln Glu Gly Val Phe
 165 170 175
 Asp Ile Asn Asn Glu Ala Asn Gly Ile Lys Ile Gly Pro Gln His Ala
 180 185 190
 Ala Thr Asn Ala Ser His Gly Ser Asn Gln Gly Gly Gln Gln Ala Gly
 195 200 205
 Gly Gly Cys Cys
 210

<210> 339

<211> 398

<212> DNA

<213> Mus musculus

<400> 339

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tggctctccac aatgaggiga accgggtggc agcaaggcct aaggcagccc tgagaccctt 180
gatcatctcc ctgatgaaga aaaggggcga cagatgtgga ggaagtatct ggaaaggga 240
gacagtcgga ttggggatct ctctgttggg cagctgaaga gctccctcac atgcaccgat 300
tgtggctact gctctacagt ctctgatccc ttctgggata tctctgttgc catcgcaaag 360
agaggttacc ctgaggtgac gttaatggat tgtatgag 398

<210> 340

<211> 886

<212> DNA

<213> Mus musculus

<400> 340

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ccgccaccga gcggcccgag atgcaggcca tcaagtgtgt ggtggtggga gacggagctg 180
ttggtaaaac ctgcctgctc atcagttaca cgaccaatgc atttcttgga gagtacatcc 240
ccaccgtctt tgacaactat tccgccaatg ttatggtaga tggaaaacca gigaatctgg 300
gcctatggga cacagctgga caagaagatt atgacagatt gcgtccctc tcctaccgc 360
agacagacgt gttcttaatt tgcttttccc ttgtgagtc tgcattattt gaaaatgtcc 420
gtgcaaagtg gtatcctgaa gtgcgacacc actgtccaa tactcctatc atcctcgtgg 480
ggacgaagct tgatcttagg gatgataagg acaccattga gaagctgaag gagaagaagc 540
tgaccccat cactaccgc caggggctgg ccatggcgaa agagatcggg gctgtcaa 600
acctggagtg ctacgctctc acacagcgag gactcaagac agtgtttgac gaagctatcc 660

gagcggttct ctgtccccct cctgtcaaga agaggaagag aaaatgcctg ctgttgtaaa 720
 tgtcggagcc cctcgttctc ggtcctgcct ggaacctttg tagctttgct caaaaatcag 780
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<210> 341

<211> 1808

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (181).. (1278)

<400> 341

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 aagttagaag tgagagttca gataagtgag gccgacattg ctgccttgaa gaaggggaga 180
 atg gat tta tca gga gtg aaa aag aag agc ttg cta gga gtc aaa gag 228
 Met Asp Leu Ser Gly Val Lys Lys Lys Ser Leu Leu Gly Val Lys Glu
 1 5 10 15
 aat aat aaa aag tcc agc act agg gct cct tct cct acc aaa cgc aag 276
 Asn Asn Lys Lys Ser Ser Thr Arg Ala Pro Ser Pro Thr Lys Arg Lys
 20 25 30
 gac cga tct gat gag aag tcc aag gat cga tct aaa gat aaa ggg gcc 324
 Asp Arg Ser Asp Glu Lys Ser Lys Asp Arg Ser Lys Asp Lys Gly Ala
 35 40 45
 act aaa gag tca agt gag aag gat cgt ggc aga gat aag act cgg aag 372
 Thr Lys Glu Ser Ser Glu Lys Asp Arg Gly Arg Asp Lys Thr Arg Lys

50	55	60	
aac gca tgg ctt caa gcg gac aag gca gta cca ggt cta ggt cca gct	420		
Asn Ala Trp Leu Gln Ala Asp Lys Ala Val Pro Gly Leu Gly Pro Ala			
65	70	75	80
caa cct cca gct cgg gct cca gca cca gca cag gct caa gca gtg gct	468		
Gln Pro Pro Ala Arg Ala Pro Ala Pro Ala Gln Ala Gln Ala Val Ala			
85	90	95	
cca gct cgt cct ctg cat cca gcc gct cag gaa gct cca gca cgt ccc	516		
Pro Ala Arg Pro Leu His Pro Ala Ala Gln Glu Ala Pro Ala Arg Pro			
100	105	110	
gga gct cca gtt cta gca gct cct ccg gct ccc caa gcc ctt ctc ggc	564		
Gly Ala Pro Val Leu Ala Ala Pro Pro Ala Pro Gln Ala Leu Leu Gly			
115	120	125	
gca ggc atg aca aca ggc gcg tcc cgc tcc aaa tcc aaa cca cct aaa	612		
Ala Gly Met Thr Thr Gly Ala Ser Arg Ser Lys Ser Lys Pro Pro Lys			
130	135	140	
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Lys Cys Thr Leu Gly Gly Ser Pro Gly Asn Val Thr Lys Asp His Ile			
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atg gaa ata ttt tct act tac ggg aaa atc aaa atg att gac atg cct	756		
Met Glu Ile Phe Ser Thr Tyr Gly Lys Ile Lys Met Ile Asp Met Pro			
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gtc gag agg atg cat cct cac ctc tcc aaa ggc tat gca tat gtg gag	804		
Val Glu Arg Met His Pro His Leu Ser Lys Gly Tyr Ala Tyr Val Glu			
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Phe Glu Asn Pro Asp Glu Ala Glu Lys Ala Leu Lys His Met Asp Gly
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 Gly Gln Ile Asp Gly Gln Glu Ile Thr Ala Thr Ala Val Leu Ala Pro
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 Trp Pro Arg Pro Pro Pro Arg Arg Phe Ser Pro Pro Arg Arg Met Leu
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 Pro Gly Pro Pro Pro Pro Gln Glu Pro Ile Gln Leu Gln Leu Leu Pro
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 Ile Ser Arg Asp Ile Asp Ser Tyr Leu Cys Asn Leu Cys Cys Pro Arg
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Asp	Arg	Ser	Asp	Glu	Lys	Ser	Lys	Asp	Arg	Ser	Lys	Asp	Lys	Gly	Ala
				35					40					45	
Thr	Lys	Glu	Ser	Ser	Glu	Lys	Asp	Arg	Gly	Arg	Asp	Lys	Thr	Arg	Lys
				50					55					60	
Asn	Ala	Trp	Leu	Gln	Ala	Asp	Lys	Ala	Val	Pro	Gly	Leu	Gly	Pro	Ala
				65					70					75	
Gln	Pro	Pro	Ala	Arg	Ala	Pro	Ala	Pro	Ala	Gln	Ala	Gln	Ala	Val	Ala
				85					90					95	
Pro	Ala	Arg	Pro	Leu	His	Pro	Ala	Ala	Gln	Glu	Ala	Pro	Ala	Arg	Pro

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Gly Ala Pro Val Leu Ala Ala Pro Pro Ala Pro Gln Ala Leu Leu Gly		
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Ala Gly Met Thr Thr Gly Ala Ser Arg Ser Lys Ser Lys Pro Pro Lys		
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Arg Asp Glu Lys Glu Arg Lys Arg Arg His Val His Leu Asn Gln Pro		
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Lys Cys Thr Leu Gly Gly Ser Pro Gly Asn Val Thr Lys Asp His Ile		
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Met Glu Ile Phe Ser Thr Tyr Gly Lys Ile Lys Met Ile Asp Met Pro		
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Val Glu Arg Met His Pro His Leu Ser Lys Gly Tyr Ala Tyr Val Glu		
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Phe Glu Asn Pro Asp Glu Ala Glu Lys Ala Leu Lys His Met Asp Gly		
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Gly Gln Ile Asp Gly Gln Glu Ile Thr Ala Thr Ala Val Leu Ala Pro		
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Trp Pro Arg Pro Pro Pro Arg Arg Phe Ser Pro Pro Arg Arg Met Leu		
245	250	255
Pro Pro Pro Pro Met Trp Arg Arg Ser Pro Pro Arg Met Arg Arg Arg		
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Ser Arg Ser Pro Arg Arg Arg Ser Pro Val Arg Arg Arg Ser Arg Ser		
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Pro Gly Pro Pro Pro Pro Gln Glu Pro Ile Gln Leu Gln Leu Leu Pro		
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Ile Ser Arg Asp Ile Asp Ser Tyr Leu Cys Asn Leu Cys Cys Pro Arg		
305	310	315
Leu Cys Phe Val Leu Phe Ser Ser Gln Val Arg Val Cys Arg Glu Arg		
325	330	335

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340

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350

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Met Gly Asn Ala Glu Ser Gln Asn Val

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5

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Asp His Glu Phe Tyr Gly Glu Lys His Ala Ser Leu Gly Arg Lys His

10

15

20

25

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 Asp Ala Thr Tyr Leu Ala Glu Gly Gly Arg Arg Gln Cys Pro Tyr Thr
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 Ser Asn Gly Pro Thr Phe Met Glu Thr Ala Ser Phe Lys Lys Lys Arg
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 Ser Lys Ser Ala Asp Ile Trp Arg Glu Asp Ser Leu Glu Phe Ser Leu

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Ser Asp Leu Ser Gln Glu His Leu Thr Ser Asn Glu Glu Ile Leu Gly				
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Ser Ala Glu Glu Lys Asp Cys Glu Glu Ala Arg Gly Met Glu Thr Glu				
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Ala Ser Pro Arg Gln Leu Ser Thr Cys Gln Arg Ala Asn Ser Leu Gly				
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gac ttg tat gct cag aaa aac tct ggg gtg aag gct aat gga gga ccg	1253			
Asp Leu Tyr Ala Gln Lys Asn Ser Gly Val Lys Ala Asn Gly Gly Pro				
	235	240	245	
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Arg Asn Arg Phe Ser Ser Tyr Cys Arg Asn Leu Val Ser Asp Ile Pro				
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 Leu Leu Thr Ala Ala Gln Gly Thr Val Arg Lys Ala Gly Ala Leu Ala
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 Val Lys Asn Phe Leu Val His Lys Lys Asn Lys Lys Val Glu Ser Ala
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 Pro Asn Pro Lys Arg Leu Leu Ala Phe Ala Ser Arg Pro Thr Lys Val

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Gln Val Phe Gly Glu Gly Thr Asp Ala Val Lys Arg Ser Leu Glu Gly			
715	720	725	
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Lys Leu Glu Lys Val Asp Gln Phe Lys Lys Val Leu Phe Ser Leu Gly			
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Cys Ala Ser His Thr Lys Val Pro Lys Val Leu Val Lys Ala Lys Thr			
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Asp Thr Ala Phe Lys Ala Phe Leu Asp Ala Gln Asn Pro Arg Gln Gln			
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His Ser Ser Thr Leu Glu Ser Tyr Leu Ile Lys Pro Ile Gln Arg Val			
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 Arg Ala Val Ser Ala Pro Ser Lys Ser Leu Gly Arg Arg Arg Arg Arg
 1435 1440 1445
 ctg gcc cga aac agg ttt acc atc gat tca gac gcc atc tca gcc agc 4901
 Leu Ala Arg Asn Arg Phe Thr Ile Asp Ser Asp Ala Ile Ser Ala Ser
 1450 1455 1460 1465
 agc ccg gag aaa gag ccc cag cag ccc gcc ggt ggt ggg gac act gac 4949
 Ser Pro Glu Lys Glu Pro Gln Gln Pro Ala Gly Gly Gly Asp Thr Asp
 1470 1475 1480
 cga tgg gla gag gaa cag ttc gat ctt gct cag tac gag gag cag gat 4997
 Arg Trp Val Glu Glu Gln Phe Asp Leu Ala Gln Tyr Glu Glu Gln Asp
 1485 1490 1495
 gac atc aag gag aca gac atc ctc agt gac gat gac gaa ttc tgt gag 5045
 Asp Ile Lys Glu Thr Asp Ile Leu Ser Asp Asp Asp Glu Phe Cys Glu
 1500 1505 1510
 tcc ctg aag ggc gcc tca gtg gac aga gac ctt cag gag cag ctt cag 5093
 Ser Leu Lys Gly Ala Ser Val Asp Arg Asp Leu Gln Glu Gln Leu Gln
 1515 1520 1525
 gct gcc tcc atc agt cag cgg gcc cga ggc cgg aga acc ctc gat agc 5141
 Ala Ala Ser Ile Ser Gln Arg Ala Arg Gly Arg Arg Thr Leu Asp Ser
 1530 1535 1540 1545
 cac gcc tcc cgc atg aca cag ctc aag aag caa gcg gcc ctc tcg ggc 5189
 His Ala Ser Arg Met Thr Gln Leu Lys Lys Gln Ala Ala Leu Ser Gly
 1550 1555 1560
 atc aac ggg ggc ctg gag agt gcg agc gag gaa gtc att tgg gtc agg 5237
 Ile Asn Gly Gly Leu Glu Ser Ala Ser Glu Glu Val Ile Trp Val Arg

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cgc gaa gac ttt gcc ccc tcc agg aaa ctg aac acg gag ata tga			5282
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atatttccag atagagagtt cagaacacca tgcctctaaag cctccccccac cccggcttgc 6842
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<210> 344

<211> 1591

<212> PRT

<213> *Mus musculus*

<400> 344

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Lys	His	Ala	Ser	Leu	Gly	Arg	Lys	His	Thr	Ser	Arg	Ser	Leu	Arg	Leu
				20				25						30	
Ser	His	Lys	Thr	Arg	Arg	Thr	Arg	His	Ala	Ser	Ser	Gly	Lys	Ala	Ile
				35				40						45	
His	Arg	Asn	Ser	Glu	Val	Ser	Thr	Arg	Ser	Ser	Ser	Thr	Pro	Ser	Ile
				50				55						60	
Pro	Gln	Ser	Leu	Ala	Glu	Asn	Gly	Leu	Glu	Pro	Phe	Ser	Gln	Glu	Gly
				65				70						75	
Ala	Leu	Asp	Asp	Phe	Gly	Asp	Pro	Ile	Trp	Val	Asp	Arg	Val	Asp	Met
				85				90						95	
Gly	Leu	Arg	Pro	Val	Ser	Tyr	Thr	Asp	Ser	Ser	Val	Thr	Pro	Ser	Val

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Asp Gly Ser Ile Val Leu Thr Ala Ala Ser Val Gln Ser Met Pro Asp		
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Ser Glu Glu Ser Arg Leu Tyr Gly Asp Asp Ala Thr Tyr Leu Ala Glu		
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Gly Gly Arg Arg Gln Cys Pro Tyr Thr Ser Asn Gly Pro Thr Phe Met		
145	150	155
Glu Thr Ala Ser Phe Lys Lys Lys Arg Ser Lys Ser Ala Asp Ile Trp		
165	170	175
Arg Glu Asp Ser Leu Glu Phe Ser Leu Ser Asp Leu Ser Gln Glu His		
180	185	190
Leu Thr Ser Asn Glu Glu Ile Leu Gly Ser Ala Glu Glu Lys Asp Cys		
195	200	205
Glu Glu Ala Arg Gly Met Glu Thr Glu Ala Ser Pro Arg Gln Leu Ser		
210	215	220
Thr Cys Gln Arg Ala Asn Ser Leu Gly Asp Leu Tyr Ala Gln Lys Asn		
225	230	235
Ser Gly Val Lys Ala Asn Gly Gly Pro Arg Asn Arg Phe Ser Ser Tyr		
245	250	255
Cys Arg Asn Leu Val Ser Asp Ile Pro Asp Leu Ala Lys His Lys Met		
260	265	270
Pro Pro Ala Ala Ala Glu Glu Thr Pro Pro Tyr Ser Asn Tyr Asn Thr		
275	280	285
Leu Pro Cys Arg Lys Ser His Cys Leu Ser Glu Gly Ala Thr Asn Pro		
290	295	300
Gln Ile Ser Leu Ser Lys Ser Met Gln Gly Arg Arg Ala Lys Thr Thr		
305	310	315
Gln Asp Val Asn Thr Gly Glu Gly Ser Glu Phe Ala Asp Ser Gly Ile		
325	330	335

Glu Gly Ala Thr Thr Asp Thr Asp Leu Leu Ser Arg Arg Ser Asn Ala
 340 345 350
 Thr Asn Ser Ser Tyr Ser Pro Pro Thr Gly Arg Ala Phe Val Gly Ser
 355 360 365
 Asp Ser Gly Ser Ser Ser Thr Gly Asp Arg Ala Arg Gln Gly Val Tyr
 370 375 380
 Glu Asn Phe Arg Arg Glu Leu Glu Met Ser Thr Thr Asn Ser Glu Ser
 385 390 395 400
 Leu Glu Glu Ala Gly Ser Ala His Ser Asp Glu Gln Ser Ser Gly Thr
 405 410 415
 Leu Ser Ser Pro Gly Gln Ser Asp Ile Leu Leu Thr Ala Ala Gln Gly
 420 425 430
 Thr Val Arg Lys Ala Gly Ala Leu Ala Val Lys Asn Phe Leu Val His
 435 440 445
 Lys Lys Asn Lys Lys Val Glu Ser Ala Thr Arg Arg Lys Trp Lys His
 450 455 460
 Tyr Trp Val Ser Leu Lys Gly Cys Thr Leu Phe Phe Tyr Glu Thr Asp
 465 470 475 480
 Gly Arg Ser Gly Ile Asp His Asn Ser Val Pro Lys His Ala Val Trp
 485 490 495
 Val Glu Asn Ser Ile Val Gln Ala Val Pro Glu His Pro Lys Lys Asp
 500 505 510
 Phe Val Phe Cys Leu Ser Asn Ser Leu Gly Asp Ala Phe Leu Phe Gln
 515 520 525
 Thr Thr Ser Gln Thr Glu Leu Glu Asn Trp Ile Thr Ala Ile His Ser
 530 535 540
 Ala Cys Ala Ala Ala Val Ala Arg His His His Lys Glu Asp Thr Leu
 545 550 555 560
 Arg Leu Leu Lys Ser Glu Ile Lys Lys Leu Glu Gln Lys Ile Asp Met

565 570 575
 Asp Glu Lys Met Lys Lys Met Gly Glu Met Gln Leu Ser Ser Val Thr
 580 585 590
 Asp Ser Lys Lys Lys Lys Thr Ile Leu Asp Gln Ile Phe Val Trp Glu
 595 600 605
 Gln Asn Leu Glu Gln Phe Gln Met Asp Leu Phe Arg Phe Arg Cys Tyr
 610 615 620
 Leu Ala Ser Leu Gln Gly Gly Glu Leu Pro Asn Pro Lys Arg Leu Leu
 625 630 635 640
 Ala Phe Ala Ser Arg Pro Thr Lys Val Ala Met Gly Arg Leu Gly Ile
 645 650 655
 Phe Ser Val Ser Ser Phe His Ala Leu Val Ala Ala Arg Thr Gly Glu
 660 665 670
 Ile Gly Val Arg Arg Arg Thr Gln Ala Met Ser Arg Ser Ala Ser Lys
 675 680 685
 Arg Arg Ser Arg Phe Ser Ser Leu Trp Gly Leu Asp Thr Thr Ser Lys
 690 695 700
 Lys Lys Gln Gly Arg Pro Thr Ile Asn Gln Val Phe Gly Glu Gly Thr
 705 710 715 720
 Asp Ala Val Lys Arg Ser Leu Glu Gly Ile Phe Asp Asp Thr Val Pro
 725 730 735
 Asp Gly Lys Arg Glu Lys Glu Val Val Leu Pro Ser Val His Gln His
 740 745 750
 Asn Pro Asp Cys Asp Ile Trp Val His Glu Tyr Phe Thr Pro Ser Trp
 755 760 765
 Phe Cys Leu Pro Asn Asn Gln Pro Ala Leu Thr Val Val Arg Pro Gly
 770 775 780
 Asp Thr Ala Arg Asp Thr Leu Glu Leu Ile Cys Lys Thr His Gln Leu
 785 790 795 800

Asp His Ser Ala His Tyr Leu Arg Leu Lys Phe Leu Met Glu Asn Arg
 805 810 815
 Val Gln Phe Tyr Ile Pro Gln Pro Glu Glu Asp Ile Tyr Glu Leu Leu
 820 825 830
 Tyr Lys Glu Ile Glu Ile Cys Pro Lys Val Thr Gln Asn Ile His Ile
 835 840 845
 Glu Lys Ser Asp Ala Ala Ala Asp Asn Tyr Gly Phe Leu Leu Ser Ser
 850 855 860
 Val Asp Glu Asp Gly Ile Arg Arg Leu Tyr Val Asn Ser Val Lys Glu
 865 870 875 880
 Thr Gly Leu Ala Ser Lys Lys Gly Leu Lys Ala Gly Asp Glu Ile Leu
 885 890 895
 Glu Ile Asn Asn Arg Ala Ala Gly Thr Leu Asn Ser Ser Met Leu Lys
 900 905 910
 Asp Phe Leu Ser Gln Pro Ser Leu Gly Leu Leu Val Arg Thr Tyr Pro
 915 920 925
 Glu Pro Glu Gly Gly Val Glu Leu Leu Glu Asn Pro Pro His Arg Val
 930 935 940
 Asp Gly Pro Val Asp Leu Gly Glu Ser Pro Leu Ala Phe Leu Thr Ser
 945 950 955 960
 Asn Pro Gly His Ser Leu Ser Ser Glu Gln Gly Ser Ser Ala Glu Thr
 965 970 975
 Ala Pro Glu Glu Gly Glu Gly Pro Asp Leu Glu Ser Ser Asp Glu Thr
 980 985 990
 Asp His Ser Ser Lys Ser Thr Glu Gln Val Ala Ala Phe Cys Arg Ser
 995 1000 1005
 Leu His Glu Met Ser Pro Ser Asp Ser Ser Pro Ser Pro Gln Asp Ala
 1010 1015 1020
 Thr Ser Pro Gln Leu Ala Thr Thr Arg Gln Leu Ser Asp Ala Asp Lys

025	1030	1035	1040
Leu Arg Lys Val Ile Cys Glu Leu Leu Glu Thr Glu Arg Thr Tyr Val			
	1045	1050	1055
Lys Asp Leu Asn Cys Leu Met Glu Arg Tyr Leu Lys Pro Leu Gln Lys			
	1060	1065	1070
Glu Thr Phe Leu Thr Gln Asp Glu Leu Asp Val Leu Phe Gly Asn Leu			
	1075	1080	1085
Thr Glu Met Val Glu Phe Gln Val Glu Phe Leu Lys Thr Leu Glu Asp			
	1090	1095	1100
Gly Val Arg Leu Val Pro Asp Leu Glu Lys Leu Glu Lys Val Asp Gln			
105	1110	1115	1120
Phe Lys Lys Val Leu Phe Ser Leu Gly Gly Ser Phe Leu Tyr Tyr Ala			
	1125	1130	1135
Asp Arg Phe Lys Leu Tyr Ser Ala Phe Cys Ala Ser His Thr Lys Val			
	1140	1145	1150
Pro Lys Val Leu Val Lys Ala Lys Thr Asp Thr Ala Phe Lys Ala Phe			
	1155	1160	1165
Leu Asp Ala Gln Asn Pro Arg Gln Gln His Ser Ser Thr Leu Glu Ser			
	1170	1175	1180
Tyr Leu Ile Lys Pro Ile Gln Arg Val Leu Lys Tyr Pro Leu Leu Leu			
185	1190	1195	1200
Arg Glu Leu Phe Ala Leu Thr Asp Ala Glu Ser Glu Glu His Tyr His			
	1205	1210	1215
Leu Asp Val Ala Ile Lys Thr Met Asn Lys Val Ala Ser His Ile Asn			
	1220	1225	1230
Glu Met Gln Lys Ile His Glu Glu Phe Gly Ala Val Phe Asp Gln Leu			
	1235	1240	1245
Ile Ala Glu Gln Thr Gly Glu Lys Lys Glu Val Ala Asp Leu Ser Met			
	1250	1255	1260

Gly Asp Leu Leu Leu His Thr Ser Val Ile Trp Leu Asn Pro Pro Ala
 265 1270 1275 1280
 Ser Leu Gly Lys Trp Lys Lys Glu Pro Glu Leu Ala Ala Phe Val Phe
 1285 1290 1295
 Lys Thr Ala Val Val Leu Val Tyr Lys Asp Gly Ser Lys Gln Lys Lys
 1300 1305 1310
 Lys Leu Val Gly Ser His Arg Leu Ser Ile Tyr Glu Glu Trp Asp Pro
 1315 1320 1325
 Phe Arg Phe Arg His Met Ile Pro Thr Glu Ala Leu Gln Val Arg Ala
 1330 1335 1340
 Leu Pro Ser Ala Asp Ala Glu Ala Asn Ala Val Cys Glu Ile Val His
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 Val Lys Ser Glu Ser Glu Gly Arg Pro Glu Arg Val Phe His Leu Cys
 1365 1370 1375
 Cys Ser Ser Pro Glu Ser Arg Lys Asp Phe Leu Lys Ser Val His Ser
 1380 1385 1390
 Ile Leu Arg Asp Lys His Arg Arg Gln Leu Leu Lys Thr Glu Ser Leu
 1395 1400 1405
 Pro Ser Ala Gln Gln Tyr Val Pro Phe Gly Gly Lys Arg Leu Cys Ala
 1410 1415 1420
 Leu Lys Gly Ala Arg Pro Ala Met Ser Arg Ala Val Ser Ala Pro Ser
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 Lys Ser Leu Gly Arg Arg Arg Arg Arg Leu Ala Arg Asn Arg Phe Thr
 1445 1450 1455
 Ile Asp Ser Asp Ala Ile Ser Ala Ser Ser Pro Glu Lys Glu Pro Gln
 1460 1465 1470
 Gln Pro Ala Gly Gly Gly Asp Thr Asp Arg Trp Val Glu Glu Gln Phe
 1475 1480 1485
 Asp Leu Ala Gln Tyr Glu Glu Gln Asp Asp Ile Lys Glu Thr Asp Ile

1490	1495	1500
Leu Ser Asp Asp Asp Glu Phe Cys Glu Ser Leu Lys Gly Ala Ser Val		
505	1510	1515
Asp Arg Asp Leu Gln Glu Gln Leu Gln Ala Ala Ser Ile Ser Gln Arg		1520
	1525	1530
Ala Arg Gly Arg Arg Thr Leu Asp Ser His Ala Ser Arg Met Thr Gln		1535
	1540	1545
Leu Lys Lys Gln Ala Ala Leu Ser Gly Ile Asn Gly Gly Leu Glu Ser		1550
	1555	1560
Ala Ser Glu Glu Val Ile Trp Val Arg Arg Glu Asp Phe Ala Pro Ser		1565
	1570	1575
Arg Lys Leu Asn Thr Glu Ile		1580
585	1590	

<210> 345

<211> 462

<212> DNA

<213> Mus musculus

<400> 345

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taggcataag gaaaccatac atctgggagt acagtcgctt aaatctcaac aacaccgtgc 180
tgtccaaaag aaagctcagc tggtttgtca atgaaggact ggtagatgga tgggatgacc 240
cacggtttcc tacagttcgt ggagttctga gaagagggat gacagttgag gtgctgaggc 300
agttcattgc tgctcagggc tcttcaaggt ctgttgtgaa catggaatgg gacgaaatgt 360
gggcgttcag caagagggtt agtgaccagt ggctcacggt acgttgcatc ctgaagaaga 420
agtcgtccag tgagtgicgt gatgccagga ggagataagg aa 462

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<210> 346

<211> 384

<212> DNA

<213> Mus musculus

<400> 346

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gttttgtaaa gagaggtaca agggactatt tactgggaga atgctctgtg ctgggaacct 120
ccaagaagac aaccgtgtgg acagctgccg gggagacagt ggaggaccac tcatgtgtga 180
aaagccatgat gagicctggg ttgtgtatgg ggtagcttcc tgggggtatg gatgtggagt 240
caaagacact cctggagttt ataccagagt ccccgctttt gtaccttgga taaaaagtgt 300
caccagtcgt taacttatgg aaagctcaag aaaatagtaa aacagtaacc attcagtcct 360
catacttggc accatgccag aaaa                                     384

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<210> 347

<211> 628

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (49).. (618)

<400> 347

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                                     Met Ala Ala
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ctt cgc atg ctg tgg atg ggt ttg gtc ctc ctg ggt ctc ttg gga ttc 105
Leu Arg Met Leu Trp Met Gly Leu Val Leu Leu Gly Leu Leu Gly Phe

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5	10	15	
cca cag acc cca gcc cag ggc cat gac aca gtg cag ccc aac ttt caa	153		
Pro Gln Thr Pro Ala Gln Gly His Asp Thr Val Gln Pro Asn Phe Gln			
20	25	30	35
caa gac aag ttc ctg ggg cgc tgg tac agc gcg ggc ctc gcc tcc aac	201		
Gln Asp Lys Phe Leu Gly Arg Trp Tyr Ser Ala Gly Leu Ala Ser Asn			
40	45	50	
tca agc tgg ttc cgg gag aag aaa gct gta ttg tat atg tgc aag aca	249		
Ser Ser Trp Phe Arg Glu Lys Lys Ala Val Leu Tyr Met Cys Lys Thr			
55	60	65	
gtg gta gcc ccc tcc aca gaa ggc ggc ctc aat ctc acc tct acc ttc	297		
Val Val Ala Pro Ser Thr Glu Gly Gly Leu Asn Leu Thr Ser Thr Phe			
70	75	80	
ctc agg aaa aac cag tgt gag acc aag atc atg gta ctg cag cct gcg	345		
Leu Arg Lys Asn Gln Cys Glu Thr Lys Ile Met Val Leu Gln Pro Ala			
85	90	95	
ggg gct cct gga cac tac acc tac agc agc ccc cac tcg ggc agc atc	393		
Gly Ala Pro Gly His Tyr Thr Tyr Ser Ser Pro His Ser Gly Ser Ile			
100	105	110	115
cac tcc gtg tca gtg gtg gag gcc aac tat gac gag tac gct ctg cta	441		
His Ser Val Ser Val Val Glu Ala Asn Tyr Asp Glu Tyr Ala Leu Leu			
120	125	130	
ttc agc aga ggc acc aag ggc cca ggc cag gac ttc cgc atg gcc acc	489		
Phe Ser Arg Gly Thr Lys Gly Pro Gly Gln Asp Phe Arg Met Ala Thr			
135	140	145	
ctc tac agc aga acc cag act ctg aag gac gag ctg aag gag aaa ttc	537		
Leu Tyr Ser Arg Thr Gln Thr Leu Lys Asp Glu Leu Lys Glu Lys Phe			
150	155	160	
acc acc ttt agc aag gcc cag ggc ctc aca gag gag gac att gtt ttc	585		

Thr Thr Phe Ser Lys Ala Gln Gly Leu Thr Glu Glu Asp Ile Val Phe
 165 170 175
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 Leu Pro Gln Pro Asp Lys Cys Ile Gln Glu
 180 185 190

<210> 348

<211> 189

<212> PRT

<213> Mus musculus

<400> 348

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 Asn Phe Gln Gln Asp Lys Phe Leu Gly Arg Trp Tyr Ser Ala Gly Leu
 35 40 45
 Ala Ser Asn Ser Ser Trp Phe Arg Glu Lys Lys Ala Val Leu Tyr Met
 50 55 60
 Cys Lys Thr Val Val Ala Pro Ser Thr Glu Gly Gly Leu Asn Leu Thr
 65 70 75 80
 Ser Thr Phe Leu Arg Lys Asn Gln Cys Glu Thr Lys Ile Met Val Leu
 85 90 95
 Gln Pro Ala Gly Ala Pro Gly His Tyr Thr Tyr Ser Ser Pro His Ser
 100 105 110
 Gly Ser Ile His Ser Val Ser Val Val Glu Ala Asn Tyr Asp Glu Tyr
 115 120 125
 Ala Leu Leu Phe Ser Arg Gly Thr Lys Gly Pro Gly Gln Asp Phe Arg

130	135	140	
Met Ala Thr Leu Tyr Ser Arg Thr Gln Thr Leu Lys Asp Glu Leu Lys			
145	150	155	160
Glu Lys Phe Thr Thr Phe Ser Lys Ala Gln Gly Leu Thr Glu Glu Asp			
	165	170	175
Ile Val Phe Leu Pro Gln Pro Asp Lys Cys Ile Gln Glu			
180	185		

<210> 349

<211> 359

<212> DNA

<213> Mus musculus

<400> 349

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atcctcccaa atgtatgcag ttctgctgag atctatggcc tgatgacatc acggggcctt 180
ggaaggcgtg ccaataatcgt gatgtttggg ggatcagict gctgcttttag tgtgacaaat 240
gtgtttcatg aaggatcaacc aaaaacacat accgaacagg ctgttttgta ctatgtaata 300
caggccacga aatgtgtggt ttctgaacat tggcttctga gcacaattgc cttacaaac 359

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<210> 350

<211> 650

<212> DNA

<213> Mus musculus

<400> 350

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ccgcagcttc tgaataggtt tggcatggac aagatctatg aaggccaagt ggaggtgaat 120

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ggaggtgaat acaatgtgga aagcattgac ggtcagcctg gtgcccttcac ttgctatctg 180
gatgcaggtc ttgcccgaac tacaactggc aataaagttt ttggggccct gaaggagct 240
gtggatggag gcttgtctat ccctcatagt accaaacgat tccctggta tgactctgaa 300
agcaaggagt tcaatgcaga ggtacatcgg aagcacatca tgggtcagaa tgtggcagac 360
tacaatgcgt acctaatgga ggaagatgaa gatgcgtata agaaacagtt ctctcagtac 420
atcaagaaca acgtaactcc agacatgatg gaggagatgt ataagaaagc tcatgctgct 480
atccgagaga atccagtcta tgagaagaag cccaagagag aagtgaagaa gaagaggttg 540
aatcgtccca aatgtctctt gccccagaag aagatcgggt ttgctcaaag aagcaagctt 600
ctcagagctc aggaaaggct gctgaactan agcagtgtct atgagatttt 650

<210> 351

<211> 482

<212> DNA

<213> Mus musculus

<400> 351

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ctagaccact gtaacatagt ccgactgcgg tatttcttct actcgagtgg tgagaagaaa 120
gatgagggtct accttaacct ggtgctggac tatgttcgg agacagtgt cagagtcgcc 180
agaactatag tcgagccaag cagacactcc ctgtgatcta tgtcaagttg tataatgtatc 240
agctgttcag aagcttagcc tatatccatt cctttggaat ctgccatcga gacattaaac 300
cacagaacct ctgtttggat cctgatacag ctgtattaaa actctgtgac ttggaagtg 360
caaagcagct ggtccgagga gagcccaatg ttccatatat ctgttctcgg tactacaggg 420
caccagagtt gatctttgga gcactgatta cacgtccagt atagatgtat ggtctgcagg 480
ct 482

<210> 352

<211> 2461

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (46).. (1899)

<400> 352

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                                     1
aag gcg tac cga ctt gga gca gtt ctg ctt ctt atc cac tta att ttc 105
Lys Ala Tyr Arg Leu Gly Ala Val Leu Leu Leu Ile His Leu Ile Phe
   5             10             15             20
ctc atc tct gga gcc gaa gca gct tcc ttc cag cga aac cag ctg ctt 153
Leu Ile Ser Gly Ala Glu Ala Ala Ser Phe Gln Arg Asn Gln Leu Leu
           25             30             35
cag aaa gaa cca gac ctc aga ttg gag aat gtc caa aag ttt cct agt 201
Gln Lys Glu Pro Asp Leu Arg Leu Glu Asn Val Gln Lys Phe Pro Ser
           40             45             50
cca gaa atg atc agg gct ttg gag tac ata gaa aag ctc agg cag caa 249
Pro Glu Met Ile Arg Ala Leu Glu Tyr Ile Glu Lys Leu Arg Gln Gln
           55             60             65
gct cac aga gaa gaa agc agc cca gac tac aat ccc tac caa ggc gtc 297
Ala His Arg Glu Glu Ser Ser Pro Asp Tyr Asn Pro Tyr Gln Gly Val
           70             75             80
tct gtt cct ctt caa ctc aaa gaa aac gga gaa gaa agc cac ttg gca 345
Ser Val Pro Leu Gln Leu Lys Glu Asn Gly Glu Glu Ser His Leu Ala
           85             90             95             100
gag agc tca agg gat gca ctg agt gaa gac gag tgg atg cgg ata ata 393

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Glu Ser Ser Arg Asp Ala Leu Ser Glu Asp Glu Trp Met Arg Ile Ile
 105 110 115
 ctc gag gct ctg agg cag gct gaa aat gag ccg cca tct gcc ccc aaa 441
 Leu Glu Ala Leu Arg Gln Ala Glu Asn Glu Pro Pro Ser Ala Pro Lys
 120 125 130
 gag aac aag ccc tat gcc ttg aat ctg gag aag aac ttc cca gtg gac 489
 Glu Asn Lys Pro Tyr Ala Leu Asn Leu Glu Lys Asn Phe Pro Val Asp
 135 140 145
 acg cct gat gac tat gag act caa cag tgg cct gag agg aaa ctc aag 537
 Thr Pro Asp Asp Tyr Glu Thr Gln Gln Trp Pro Glu Arg Lys Leu Lys
 150 155 160
 cac atg cgg ttc cct ctc atg tat gaa gag aat tcc aga gaa aac ccc 585
 His Met Arg Phe Pro Leu Met Tyr Glu Glu Asn Ser Arg Glu Asn Pro
 165 170 175 180
 ttc aaa cgc aca aat gaa ata gtc gag gaa caa tac aca ccc caa agt 633
 Phe Lys Arg Thr Asn Glu Ile Val Glu Glu Gln Tyr Thr Pro Gln Ser
 185 190 195
 ctt gct acc ctg gag tct gtg ttc caa gag ctt ggg aaa ctg aca ggg 681
 Leu Ala Thr Leu Glu Ser Val Phe Gln Glu Leu Gly Lys Leu Thr Gly
 200 205 210
 cca agc aac cag aag cgt gag agg gtt gac gag gaa caa aag ctg tac 729
 Pro Ser Asn Gln Lys Arg Glu Arg Val Asp Glu Glu Gln Lys Leu Tyr
 215 220 225
 aca gat gat gaa gac gac gtg tac aag acc aac aac att gcc tat gaa 777
 Thr Asp Asp Glu Asp Asp Val Tyr Lys Thr Asn Asn Ile Ala Tyr Glu
 230 235 240
 gat gtc gtg ggg gga gaa gac tgg agc ccc ata gag gag aaa ata gag 825
 Asp Val Val Gly Gly Glu Asp Trp Ser Pro Ile Glu Glu Lys Ile Glu
 245 250 255 260

act caa acc cag gaa gag gtg aga gac agc aaa gag aac aca gaa aaa 873
 Thr Gln Thr Gln Glu Glu Val Arg Asp Ser Lys Glu Asn Thr Glu Lys
 265 270 275
 aat gaa caa atc aat gaa gag atg aaa cgt tca ggg cag ttg ggg ctc 921
 Asn Glu Gln Ile Asn Glu Glu Met Lys Arg Ser Gly Gln Leu Gly Leu
 280 285 290
 cca gat gaa gaa aac cgg aga gag agt aaa gac caa ctc tca gag gat 969
 Pro Asp Glu Glu Asn Arg Arg Glu Ser Lys Asp Gln Leu Ser Glu Asp
 295 300 305
 gcc tcc aaa gtt atc acc tac ctg aga agg tta gtg aat gct gtg ggc 1017
 Ala Ser Lys Val Ile Thr Tyr Leu Arg Arg Leu Val Asn Ala Val Gly
 310 315 320
 agt ggg agg tca cag agt ggg cca aat ggg gac agg gca gcc cgg ctt 1065
 Ser Gly Arg Ser Gln Ser Gly Pro Asn Gly Asp Arg Ala Ala Arg Leu
 325 330 335 340
 ctt cag aag ccc ctt gat tct cag tct att tat cag ctg att gaa atc 1113
 Leu Gln Lys Pro Leu Asp Ser Gln Ser Ile Tyr Gln Leu Ile Glu Ile
 345 350 355
 tcc agg aat ttg cag ata ccc cct gaa gat tta att gag atg ctc aaa 1161
 Ser Arg Asn Leu Gln Ile Pro Pro Glu Asp Leu Ile Glu Met Leu Lys
 360 365 370
 gct gga gag aag cca aat ggg ttg gtg gag cca gag cag gat ctg gag 1209
 Ala Gly Glu Lys Pro Asn Gly Leu Val Glu Pro Glu Gln Asp Leu Glu
 375 380 385
 ctt gct gtt gac cta gat gac atc cca gag gct gac cta gac cgt cca 1257
 Leu Ala Val Asp Leu Asp Asp Ile Pro Glu Ala Asp Leu Asp Arg Pro
 390 395 400
 gac atg ttt caa agt aag atg ctc tcc aag ggt ggg tat ccc aag gca 1305
 Asp Met Phe Gln Ser Lys Met Leu Ser Lys Gly Gly Tyr Pro Lys Ala

405	410	415	420	
cct ggt cgt ggt atg gta gag gcc ttg cct gat ggg ctg agt gtc gag	1353			
Pro Gly Arg Gly Met Val Glu Ala Leu Pro Asp Gly Leu Ser Val Glu				
	425	430	435	
gac att tta aat gtt tta ggg atg gag aat gta gta aat cag aag tcc	1401			
Asp Ile Leu Asn Val Leu Gly Met Glu Asn Val Val Asn Gln Lys Ser				
	440	445	450	
cca tat ttt ccc aac caa tat agc caa gac aag gct ctg atg agg ctc	1449			
Pro Tyr Phe Pro Asn Gln Tyr Ser Gln Asp Lys Ala Leu Met Arg Leu				
	455	460	465	
cct tat ggt cct ggg aaa tct aga gcc aac cag att ccc aaa gta gcc	1497			
Pro Tyr Gly Pro Gly Lys Ser Arg Ala Asn Gln Ile Pro Lys Val Ala				
	470	475	480	
tgg atc cct gat gtt gaa agc aga caa gca cct tat gaa aat ctg aat	1545			
Trp Ile Pro Asp Val Glu Ser Arg Gln Ala Pro Tyr Glu Asn Leu Asn				
	485	490	495	500
gac caa gaa ttg gga gag tac tta gcc agg atg cta gtt aag tac cct	1593			
Asp Gln Glu Leu Gly Glu Tyr Leu Ala Arg Met Leu Val Lys Tyr Pro				
	505	510	515	
gag ctc ctg aat acc aac cag ctg aag aga gtg ccc agt cca gtc tcc	1641			
Glu Leu Leu Asn Thr Asn Gln Leu Lys Arg Val Pro Ser Pro Val Ser				
	520	525	530	
tca gag gat gac ctc caa gaa gaa gag cag ctc gag cag gcc atc aag	1689			
Ser Glu Asp Asp Leu Gln Glu Glu Gln Leu Glu Gln Ala Ile Lys				
	535	540	545	
gaa cat ctg ggg cca gga agc tcc cag gaa atg gag aga ctg gcc aag	1737			
Glu His Leu Gly Pro Gly Ser Ser Gln Glu Met Glu Arg Leu Ala Lys				
	550	555	560	
gtg agc aaa agg atc ccc gta gga tcc ctg aag aat gag gac acc cca	1785			

Val Ser Lys Arg Ile Pro Val Gly Ser Leu Lys Asn Glu Asp Thr Pro
 565 570 575 580
 aac aga cag tac ctg gat gaa gat atg ctc ctg aaa gig ctg gag tac 1833
 Asn Arg Gln Tyr Leu Asp Glu Asp Met Leu Leu Lys Val Leu Glu Tyr
 585 590 595
 ctc aac caa gag cag gca gag cag ggg agg gag cat ctt gcc aag cgg 1881
 Leu Asn Gln Glu Gln Ala Glu Gln Gly Arg Glu His Leu Ala Lys Arg
 600 605 610
 gcc atg gaa aac atg taa acagctttaa tgcccaattt cccttctttc 1929
 Ala Met Glu Asn Met
 615
 ccccaagtaa gccccctaca tttctcttaa gtgtgttgat ctctatcctg ttgacagtgt 1989
 aatatcttta aagtgatgta taggcagatg actccaggtc attttggggg atctgcttca 2049
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 aaaaaaatgt tctttattca agaaagatat ctatgatagt gttggctaata gttatctaag 2169
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 aaccaataaa gcattataaa tatatagttt tacttataag gccttttcta ttgtgtgttt 2349
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<210> 353

<211> 617

<212> PRT

<213> Mus musculus

<400> 353

Met Ala Gly Ala Lys Ala Tyr Arg Leu Gly Ala Val Leu Leu Leu Ile

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His Leu Ile Phe Leu Ile Ser Gly Ala Glu Ala Ala Ser Phe Gln Arg
 20 25 30
 Asn Gln Leu Leu Gln Lys Glu Pro Asp Leu Arg Leu Glu Asn Val Gln
 35 40 45
 Lys Phe Pro Ser Pro Glu Met Ile Arg Ala Leu Glu Tyr Ile Glu Lys
 50 55 60
 Leu Arg Gln Gln Ala His Arg Glu Glu Ser Ser Pro Asp Tyr Asn Pro
 65 70 75 80
 Tyr Gln Gly Val Ser Val Pro Leu Gln Leu Lys Glu Asn Gly Glu Glu
 85 90 95
 Ser His Leu Ala Glu Ser Ser Arg Asp Ala Leu Ser Glu Asp Glu Trp
 100 105 110
 Met Arg Ile Ile Leu Glu Ala Leu Arg Gln Ala Glu Asn Glu Pro Pro
 115 120 125
 Ser Ala Pro Lys Glu Asn Lys Pro Tyr Ala Leu Asn Leu Glu Lys Asn
 130 135 140
 Phe Pro Val Asp Thr Pro Asp Asp Tyr Glu Thr Gln Gln Trp Pro Glu
 145 150 155 160
 Arg Lys Leu Lys His Met Arg Phe Pro Leu Met Tyr Glu Glu Asn Ser
 165 170 175
 Arg Glu Asn Pro Phe Lys Arg Thr Asn Glu Ile Val Glu Glu Gln Tyr
 180 185 190
 Thr Pro Gln Ser Leu Ala Thr Leu Glu Ser Val Phe Gln Glu Leu Gly
 195 200 205
 Lys Leu Thr Gly Pro Ser Asn Gln Lys Arg Glu Arg Val Asp Glu Glu
 210 215 220
 Gln Lys Leu Tyr Thr Asp Asp Glu Asp Asp Val Tyr Lys Thr Asn Asn
 225 230 235 240
 Ile Ala Tyr Glu Asp Val Val Gly Gly Glu Asp Trp Ser Pro Ile Glu

	245		250		255
Glu Lys Ile Glu Thr Gln Thr Gln Glu Glu Val Arg Asp Ser Lys Glu					
	260		265		270
Asn Thr Glu Lys Asn Glu Gln Ile Asn Glu Glu Met Lys Arg Ser Gly					
	275		280		285
Gln Leu Gly Leu Pro Asp Glu Glu Asn Arg Arg Glu Ser Lys Asp Gln					
	290		295		300
Leu Ser Glu Asp Ala Ser Lys Val Ile Thr Tyr Leu Arg Arg Leu Val					
305		310		315	320
Asn Ala Val Gly Ser Gly Arg Ser Gln Ser Gly Pro Asn Gly Asp Arg					
	325		330		335
Ala Ala Arg Leu Leu Gln Lys Pro Leu Asp Ser Gln Ser Ile Tyr Gln					
	340		345		350
Leu Ile Glu Ile Ser Arg Asn Leu Gln Ile Pro Pro Glu Asp Leu Ile					
	355		360		365
Glu Met Leu Lys Ala Gly Glu Lys Pro Asn Gly Leu Val Glu Pro Glu					
	370		375		380
Gln Asp Leu Glu Leu Ala Val Asp Leu Asp Asp Ile Pro Glu Ala Asp					
385		390		395	400
Leu Asp Arg Pro Asp Met Phe Gln Ser Lys Met Leu Ser Lys Gly Gly					
	405		410		415
Tyr Pro Lys Ala Pro Gly Arg Gly Met Val Glu Ala Leu Pro Asp Gly					
	420		425		430
Leu Ser Val Glu Asp Ile Leu Asn Val Leu Gly Met Glu Asn Val Val					
	435		440		445
Asn Gln Lys Ser Pro Tyr Phe Pro Asn Gln Tyr Ser Gln Asp Lys Ala					
	450		455		460
Leu Met Arg Leu Pro Tyr Gly Pro Gly Lys Ser Arg Ala Asn Gln Ile					
465		470		475	480

Pro Lys Val Ala Trp Ile Pro Asp Val Glu Ser Arg Gln Ala Pro Tyr
 485 490 495
 Glu Asn Leu Asn Asp Gln Glu Leu Gly Glu Tyr Leu Ala Arg Met Leu
 500 505 510
 Val Lys Tyr Pro Glu Leu Leu Asn Thr Asn Gln Leu Lys Arg Val Pro
 515 520 525
 Ser Pro Val Ser Ser Glu Asp Asp Leu Gln Glu Glu Glu Gln Leu Glu
 530 535 540
 Gln Ala Ile Lys Glu His Leu Gly Pro Gly Ser Ser Gln Glu Met Glu
 545 550 555 560
 Arg Leu Ala Lys Val Ser Lys Arg Ile Pro Val Gly Ser Leu Lys Asn
 565 570 575
 Glu Asp Thr Pro Asn Arg Gln Tyr Leu Asp Glu Asp Met Leu Leu Lys
 580 585 590
 Val Leu Glu Tyr Leu Asn Gln Glu Gln Ala Glu Gln Gly Arg Glu His
 595 600 605
 Leu Ala Lys Arg Ala Met Glu Asn Met
 610 615

<210> 354

<211> 1968

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (121).. (969)

<400> 354

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 atg agc cgc cag act gct aca gca tta ccc act ggc acc tca aag tgt 168
 Met Ser Arg Gln Thr Ala Thr Ala Leu Pro Thr Gly Thr Ser Lys Cys
 1 5 10 15
 cca cca tcc cag agg gta cct gcc ttg acc ggc aca act gca tcc aac 216
 Pro Pro Ser Gln Arg Val Pro Ala Leu Thr Gly Thr Thr Ala Ser Asn
 20 25 30
 aat gac ttg gcg agt ctt ttt gag tgt cct gtc tgc ttt gac tat gtg 264
 Asn Asp Leu Ala Ser Leu Phe Glu Cys Pro Val Cys Phe Asp Tyr Val
 35 40 45
 ttg cca cct att ctt cag tgt cag agt ggc cat ctt gtt tgt agc aac 312
 Leu Pro Pro Ile Leu Gln Cys Gln Ser Gly His Leu Val Cys Ser Asn
 50 55 60
 tgt cgc ccc aaa ctt aca tgt tgt ccc act tgc cgg ggc cca ttg gga 360
 Cys Arg Pro Lys Leu Thr Cys Cys Pro Thr Cys Arg Gly Pro Leu Gly
 65 70 75 80
 tcc att cgc aac ttg gct atg gag aaa gtg gcc aac tca gta ctc ttc 408
 Ser Ile Arg Asn Leu Ala Met Glu Lys Val Ala Asn Ser Val Leu Phe
 85 90 95
 cct tgt aaa tat gcc tct tct gga tgt gaa ata act ctg cca cac acc 456
 Pro Cys Lys Tyr Ala Ser Ser Gly Cys Glu Ile Thr Leu Pro His Thr
 100 105 110
 gaa aag gca gag cac gag gag ctc tgt gag ttc agg cct tac tcc tgc 504
 Glu Lys Ala Glu His Glu Glu Leu Cys Glu Phe Arg Pro Tyr Ser Cys
 115 120 125
 ccc tgc cct ggt gct tcc tgt aag tgg caa ggc tcc ttg gat gcc gtc 552
 Pro Cys Pro Gly Ala Ser Cys Lys Trp Gln Gly Ser Leu Asp Ala Val
 130 135 140

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atg ccc cac ctg atg cat cag cac aag tcc att acc acc ctg caa gga      600
Met Pro His Leu Met His Gln His Lys Ser Ile Thr Thr Leu Gln Gly
145              150              155              160
gaa gat ata gtt ttc ctt gct aca gac att aac ctt cct ggt gct gtt      648
Glu Asp Ile Val Phe Leu Ala Thr Asp Ile Asn Leu Pro Gly Ala Val
              165              170              175
gac tgg gtg atg atg cag tct tgt ttt ggc ttt cat ttc atg tta gtc      696
Asp Trp Val Met Met Gln Ser Cys Phe Gly Phe His Phe Met Leu Val
              180              185              190
ttg gag aaa caa gaa aaa tat gat ggt cat cag cag ttc ttt gca att      744
Leu Glu Lys Gln Glu Lys Tyr Asp Gly His Gln Gln Phe Phe Ala Ile
              195              200              205
gta caa ctg ata gga aca cgc aag caa gct gaa aat ttt gca tat cga      792
Val Gln Leu Ile Gly Thr Arg Lys Gln Ala Glu Asn Phe Ala Tyr Arg
              210              215              220
ctt gag cta aat ggt cat agg cgg cga ttg act tgg gaa gcg act cct      840
Leu Glu Leu Asn Gly His Arg Arg Arg Leu Thr Trp Glu Ala Thr Pro
225              230              235              240
cgg tct att cat gag gga att gca aca gcc att atg aat agt gac tgc      888
Arg Ser Ile His Glu Gly Ile Ala Thr Ala Ile Met Asn Ser Asp Cys
              245              250              255
cta gtg ttt gac acc agc att gca cag ctt ttt gca gaa aat ggc aat      936
Leu Val Phe Asp Thr Ser Ile Ala Gln Leu Phe Ala Glu Asn Gly Asn
              260              265              270
tta ggc atc aat gta act att tcc atg tgt tga aacggcaatc aaatatctt 989
Leu Gly Ile Asn Val Thr Ile Ser Met Cys
              275              280
ggccagtgtt taaaatttgc atttgacttc acagagaata aggcacccat ctgcttgcca 1049
acctaaaact ttccctggtag gtagaagcta gacatgaagg taaataaaaa gaaaagctgt 1109

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taatacagga aacagttgca ttagtaaca ctaatatatt taaaaataat tcaacagtaa 1169
 accactgaaa aaaatatata tacccaagat gggcatcttt tgtattaaga aaggaaacat 1229
 tgtaaaaatat ttctgaactt tgtgtttgtt gtagattgat tgtattgttg acaatTTTTT 1289
 gggggtgtgt gtctgtgcac gcatgcgtgc acgtgtgtgg ttggTTTTct tttactgac 1349
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<210> 355

<211> 282

<212> PRT

<213> Mus musculus

<400> 355

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Pro	Pro	Ser	Gln	Arg	Val	Pro	Ala	Leu	Thr	Gly	Thr	Thr	Ala	Ser	Asn
				20					25					30	
Asn	Asp	Leu	Ala	Ser	Leu	Phe	Glu	Cys	Pro	Val	Cys	Phe	Asp	Tyr	Val
				35				40						45	
Leu	Pro	Pro	Ile	Leu	Gln	Cys	Gln	Ser	Gly	His	Leu	Val	Cys	Ser	Asn

50	55	60
Cys Arg Pro Lys Leu Thr	Cys Cys Pro Thr	Cys Arg Gly Pro Leu Gly
65	70	75
Ser Ile Arg Asn Leu Ala Met	Glu Lys Val Ala Asn Ser Val	Leu Phe
85	90	95
Pro Cys Lys Tyr Ala Ser Ser	Gly Cys Glu Ile Thr	Leu Pro His Thr
100	105	110
Glu Lys Ala Glu His Glu Glu	Leu Cys Glu Phe Arg Pro Tyr Ser Cys	
115	120	125
Pro Cys Pro Gly Ala Ser Cys	Lys Trp Gln Gly Ser Leu Asp Ala Val	
130	135	140
Met Pro His Leu Met His Gln	His Lys Ser Ile Thr Thr	Leu Gln Gly
145	150	155
Glu Asp Ile Val Phe Leu Ala	Thr Asp Ile Asn Leu Pro Gly Ala Val	
165	170	175
Asp Trp Val Met Met Gln Ser	Cys Phe Gly Phe His Phe Met	Leu Val
180	185	190
Leu Glu Lys Gln Glu Lys Tyr	Asp Gly His Gln Gln Phe Phe	Ala Ile
195	200	205
Val Gln Leu Ile Gly Thr Arg	Lys Gln Ala Glu Asn Phe Ala Tyr Arg	
210	215	220
Leu Glu Leu Asn Gly His Arg	Arg Arg Leu Thr Trp Glu Ala Thr Pro	
225	230	235
Arg Ser Ile His Glu Gly Ile	Ala Thr Ala Ile Met Asn Ser Asp Cys	
245	250	255
Leu Val Phe Asp Thr Ser Ile	Ala Gln Leu Phe Ala Glu Asn Gly Asn	
260	265	270
Leu Gly Ile Asn Val Thr Ile	Ser Met Cys	
275	280	

<210> 356

<211> 2198

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (290).. (1267)

<400> 356

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 gcgggtccggt ccccgccctc ccgggtccgg tcgggtccgc gctgggtccc ccgggctggg 180
 cgccgtggcg ttgccccgga gcccgccacc cgcggggcgc gcaccgcctt aaccggggcg 240
 gccccgcggc aggcagacgc ccgcaggtcc atggtgggct cggagcgcg atg agc cgc 298

Met Ser Arg

1

ccg tcc tcc acc ggc ccc agc gct aac aaa ccc tgc agc aag cag ccg 346
 Pro Ser Ser Thr Gly Pro Ser Ala Asn Lys Pro Cys Ser Lys Gln Pro

5

10

15

ccg ccg cct cag acc ccg cac gcc ccg tcc ccg gct gcg ccc ccg gcc 394
 Pro Pro Pro Gln Thr Pro His Ala Pro Ser Pro Ala Ala Pro Pro Ala

20

25

30

35

gcc gcc acc atc tcg gca gcg ggc ccc ggc tcg tcc gcg gtg ccc gcc 442
 Ala Ala Thr Ile Ser Ala Ala Gly Pro Gly Ser Ser Ala Val Pro Ala

40

45

50

gcg gca gcg gtg atc tca ggc ccc gga gcc ggc ggc ggg gcc gac ccg 490
 Ala Ala Ala Val Ile Ser Gly Pro Gly Ala Gly Gly Gly Ala Asp Pro

55	60	65	
gtg tcc ccg cag cac cac gag ctg acc tcg ctc ttc gag tgc ccg gtc	538		
Val Ser Pro Gln His His Glu Leu Thr Ser Leu Phe Glu Cys Pro Val			
70	75	80	
tgc ttt gac tat gtc ctg ccc ccc att ctg cag tgc cag gcc ggg cac	586		
Cys Phe Asp Tyr Val Leu Pro Pro Ile Leu Gln Cys Gln Ala Gly His			
85	90	95	
ctg gtg tgt aac caa tgc cgc cag aag tta agc tgc tgc ccg acg tgc	634		
Leu Val Cys Asn Gln Cys Arg Gln Lys Leu Ser Cys Cys Pro Thr Cys			
100	105	110	115
agg ggc gcc cta acg ccc agc atc agg aac ctg gct atg gag aag gtc	682		
Arg Gly Ala Leu Thr Pro Ser Ile Arg Asn Leu Ala Met Glu Lys Val			
120	125	130	
gcc tcg gca gtt ctg ttt ccc tgt aag tat gct acc acg ggc tgt tcc	730		
Ala Ser Ala Val Leu Phe Pro Cys Lys Tyr Ala Thr Thr Gly Cys Ser			
135	140	145	
ctg act cta cac cat aca gag aaa cca gag cat gaa gac atc tgt gaa	778		
Leu Thr Leu His His Thr Glu Lys Pro Glu His Glu Asp Ile Cys Glu			
150	155	160	
tac cgt cct tat tcc tgt cct tgt cct ggt gca tcc tgc aag tgg cag	826		
Tyr Arg Pro Tyr Ser Cys Pro Cys Pro Gly Ala Ser Cys Lys Trp Gln			
165	170	175	
gga tcc ctg gaa gct gtg atg tcc cat ctc atg cat gcc cac aag agt	874		
Gly Ser Leu Glu Ala Val Met Ser His Leu Met His Ala His Lys Ser			
180	185	190	195
atc act acc ctt cag gga gag gag aca gtc ttt cta gct aca gac att	922		
Ile Thr Thr Leu Gln Gly Glu Glu Thr Val Phe Leu Ala Thr Asp Ile			
200	205	210	
aac ctg cca ggg gct gtg gac tgg gtg atg atg cag tcc tgt ttt ggc	970		

Asn Leu Pro Gly Ala Val Asp Trp Val Met Met Gln Ser Cys Phe Gly
 215 220 225
 cac cac ttc atg ctg gta ctt gaa aag caa gag aag tac gaa ggc cac 1018
 His His Phe Met Leu Val Leu Glu Lys Gln Glu Lys Tyr Glu Gly His
 230 235 240
 cag cag ttc ttt gcc atc gtc ctc ctc att ggc acc cga aag caa gct 1066
 Gln Gln Phe Phe Ala Ile Val Leu Leu Ile Gly Thr Arg Lys Gln Ala
 245 250 255
 gag aac ttt gcc tac aga ctg gag ttg aat ggg aac cgg agg aga ctg 1114
 Glu Asn Phe Ala Tyr Arg Leu Glu Leu Asn Gly Asn Arg Arg Arg Leu
 260 265 270 275
 acc tgg gag gcc aca cct cgg tcc att cat gat ggc gtg gct gca gcc 1162
 Thr Trp Glu Ala Thr Pro Arg Ser Ile His Asp Gly Val Ala Ala Ala
 280 285 290
 atc atg aac agt gac tgt ctt gtt ttt gac aca gcc ata gca cat ctc 1210
 Ile Met Asn Ser Asp Cys Leu Val Phe Asp Thr Ala Ile Ala His Leu
 295 300 305
 ttt gca gat aat ggg aac ctt gga atc aat gtc acg ata tct aca tgc 1258
 Phe Ala Asp Asn Gly Asn Leu Gly Ile Asn Val Thr Ile Ser Thr Cys
 310 315 320
 tgt cag tga ggctccagga ggctttccta accctgggaa gttatttggg 1307
 Cys Gln
 325
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cagaatcacc tgtagtactc atctccaaca cagagctaga gaatcaacag agttgagcaa 1727
 cctcctcacc tcagagtttg aggattactg gcttgaattg tgggcaaggg tccaggatct 1787
 aaagggtgctt taaggcgtcc tctgctgaca ctgttggctt ctactgtccg tctcagcct 1847
 ctgcacacac cacatggaga ccagaactct aaatccatgg ggaatgcaacc cctgggggttg 1907
 gcctgctttc aggcgctcag tgagttgaga gttctcacag ttagttgttg ctcaccatag 1967
 tacggaatgac ttgtttacat atggcttccc ttggaagccc tccttgactg taactgatgt 2027
 gagagactag atcagtgcct gggagaactt gataaccagt gtcacatgct tgccatttta 2087
 aaagcaatgtg tcagttgtgt gggtttagtt ttgtttgttt ttgtttttat ctttacatac 2147
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<210> 357

<211> 325

<212> PRT

<213> Mus musculus

<400> 357

Met	Ser	Arg	Pro	Ser	Ser	Thr	Gly	Pro	Ser	Ala	Asn	Lys	Pro	Cys	Ser
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Lys	Gln	Pro	Pro	Pro	Pro	Gln	Thr	Pro	His	Ala	Pro	Ser	Pro	Ala	Ala
				20				25					30		
Pro	Pro	Ala	Ala	Ala	Thr	Ile	Ser	Ala	Ala	Gly	Pro	Gly	Ser	Ser	Ala
				35				40					45		
Val	Pro	Ala	Ala	Ala	Ala	Val	Ile	Ser	Gly	Pro	Gly	Ala	Gly	Gly	Gly
				50				55					60		
Ala	Asp	Pro	Val	Ser	Pro	Gln	His	His	Glu	Leu	Thr	Ser	Leu	Phe	Glu
65				70				75					80		
Cys	Pro	Val	Cys	Phe	Asp	Tyr	Val	Leu	Pro	Pro	Ile	Leu	Gln	Cys	Gln
				85				90					95		
Ala	Gly	His	Leu	Val	Cys	Asn	Gln	Cys	Arg	Gln	Lys	Leu	Ser	Cys	Cys

100	105	110
Pro Thr Cys Arg Gly Ala Leu Thr	Pro Ser Ile Arg Asn Leu Ala Met	
115	120	125
Glu Lys Val Ala Ser Ala Val Leu Phe	Pro Cys Lys Tyr Ala Thr Thr	
130	135	140
Gly Cys Ser Leu Thr Leu His His Thr	Glu Lys Pro Glu His Glu Asp	
145	150	155
Ile Cys Glu Tyr Arg Pro Tyr Ser Cys	Pro Cys Pro Gly Ala Ser Cys	
165	170	175
Lys Trp Gln Gly Ser Leu Glu Ala Val	Met Ser His Leu Met His Ala	
180	185	190
His Lys Ser Ile Thr Thr Leu Gln Gly	Glu Glu Thr Val Phe Leu Ala	
195	200	205
Thr Asp Ile Asn Leu Pro Gly Ala Val	Asp Trp Val Met Met Gln Ser	
210	215	220
Cys Phe Gly His His Phe Met Leu Val	Leu Glu Lys Gln Glu Lys Tyr	
225	230	235
Glu Gly His Gln Gln Phe Phe Ala Ile	Val Leu Leu Ile Gly Thr Arg	
245	250	255
Lys Gln Ala Glu Asn Phe Ala Tyr Arg	Leu Glu Leu Asn Gly Asn Arg	
260	265	270
Arg Arg Leu Thr Trp Glu Ala Thr Pro	Arg Ser Ile His Asp Gly Val	
275	280	285
Ala Ala Ala Ile Met Asn Ser Asp Cys	Leu Val Phe Asp Thr Ala Ile	
290	295	300
Ala His Leu Phe Ala Asp Asn Gly Asn	Leu Gly Ile Asn Val Thr Ile	
305	310	315
Ser Thr Cys Cys Gln		320
325		

<210> 358

<211> 1644

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (99).. (1277)

<400> 358

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Met Ala Ala Ala Ala Ala

1

5

gca aca cca ggc tta ggc cca ctc cag ctg cag gat gaa gtg gcc cag 164

Ala Thr Pro Gly Leu Gly Pro Leu Gln Leu Gln Asp Glu Val Ala Gln

10

15

20

cca ctg aac cta tca gct aag ccc aag acc tct gat ggc aaa tca cct 212

Pro Leu Asn Leu Ser Ala Lys Pro Lys Thr Ser Asp Gly Lys Ser Pro

25

30

35

gca tca ccc acc tct cct cac atg cca gct ctg aga ata aac agt ggg 260

Ala Ser Pro Thr Ser Pro His Met Pro Ala Leu Arg Ile Asn Ser Gly

40

45

50

gct ggc ccc ctc aaa gcc tct gtc ccg gca gca tta gct agt cct tct 308

Ala Gly Pro Leu Lys Ala Ser Val Pro Ala Ala Leu Ala Ser Pro Ser

55

60

65

70

gca aga gtt agc aca ata ggc tat tta aat gac cac gat gct gtc acc 356

Ala Arg Val Ser Thr Ile Gly Tyr Leu Asn Asp His Asp Ala Val Thr

75	80	85	
aag gca atc caa gaa gct cgc cag atg aaa gag caa ctc agg cga gag			404
Lys Ala Ile Gln Glu Ala Arg Gln Met Lys Glu Gln Leu Arg Arg Glu			
90	95	100	
cag caa gcg ttg gac ggg aag gtg gcc gtg gtg aac agc ata ggt ctc			452
Gln Gln Ala Leu Asp Gly Lys Val Ala Val Val Asn Ser Ile Gly Leu			
105	110	115	
agc aac tgc cgg aca gaa aag gaa aaa aca aca ctg gag agc ctg act			500
Ser Asn Cys Arg Thr Glu Lys Glu Lys Thr Thr Leu Glu Ser Leu Thr			
120	125	130	
cag cag ttg gca gtt aaa cag aat gaa gaa ggg aaa ttt agc cat gga			548
Gln Gln Leu Ala Val Lys Gln Asn Glu Glu Gly Lys Phe Ser His Gly			
135	140	145	150
atg atg gat ttc aat atg agt gga gat tct gac gga agc gct gga gtc			596
Met Met Asp Phe Asn Met Ser Gly Asp Ser Asp Gly Ser Ala Gly Val			
155	160	165	
tca gag tca aga att tac agg gaa tcc agg gga cgt ggt agc aac gag			644
Ser Glu Ser Arg Ile Tyr Arg Glu Ser Arg Gly Arg Gly Ser Asn Glu			
170	175	180	
ccc cac ata aag cgt cca atg aat gcc ttc atg gtg tgg gcg aaa gat			692
Pro His Ile Lys Arg Pro Met Asn Ala Phe Met Val Trp Ala Lys Asp			
185	190	195	
gaa cgg agg aaa atc ctt cag gcc ttt ccc gac atg cac aat tcc aac			740
Glu Arg Arg Lys Ile Leu Gln Ala Phe Pro Asp Met His Asn Ser Asn			
200	205	210	
atc agc aag ata ctg gga tct cgc tgg aaa gct atg acc aac cta gag			788
Ile Ser Lys Ile Leu Gly Ser Arg Trp Lys Ala Met Thr Asn Leu Glu			
215	220	225	230
aaa cag cca tac tat gag gag cag gcc cgc ctc agc aaa cag cac ctg			836

Lys Gln Pro Tyr Tyr Glu Glu Gln Ala Arg Leu Ser Lys Gln His Leu
 235 240 245
 gag aag tac ccg gac tat aag tac aag cct agg ccg aag cgc acc tgt 884
 Glu Lys Tyr Pro Asp Tyr Lys Tyr Lys Pro Arg Pro Lys Arg Thr Cys
 250 255 260
 ctg gtg gac ggc aag aaa ctg cgt atc ggg gag tac aag gcc atc atg 932
 Leu Val Asp Gly Lys Lys Leu Arg Ile Gly Glu Tyr Lys Ala Ile Met
 265 270 275
 cgg aac cgg agg cag gaa atg cga cag tac ttc aat gtt ggg caa caa 980
 Arg Asn Arg Arg Gln Glu Met Arg Gln Tyr Phe Asn Val Gly Gln Gln
 280 285 290
 gca cag atc ccc atc gcg acg gcc gga gtt gta tac ccc ggc gcc atc 1028
 Ala Gln Ile Pro Ile Ala Thr Ala Gly Val Val Tyr Pro Gly Ala Ile
 295 300 305 310
 gcc atg gca gga atg ccg tcc cct cac ctg ccc tcc gag cac tcg agc 1076
 Ala Met Ala Gly Met Pro Ser Pro His Leu Pro Ser Glu His Ser Ser
 315 320 325
 gtg tcc agc agc ccg gag ccc ggg atg ccc gtg atc cag agc act tac 1124
 Val Ser Ser Ser Pro Glu Pro Gly Met Pro Val Ile Gln Ser Thr Tyr
 330 335 340
 ggc gcc aag gga gag gag ccc cac atc aag gaa gag atc cag gct gag 1172
 Gly Ala Lys Gly Glu Glu Pro His Ile Lys Glu Glu Ile Gln Ala Glu
 345 350 355
 gac atc aac gga gag att tac gag gag tac gat gag gag gag gag gac 1220
 Asp Ile Asn Gly Glu Ile Tyr Glu Glu Tyr Asp Glu Glu Glu Glu Asp
 360 365 370
 ccg gat gtg gat tat ggg agt gac agc gaa aac cac att gcg gga caa 1268
 Pro Asp Val Asp Tyr Gly Ser Asp Ser Glu Asn His Ile Ala Gly Gln
 375 380 385 390

gcc aac tga taagggccaa cagactgtgg tgagccgagg acttgaagaa 1317

Ala Asn

gccctgtccg gttcctcctt cccagtggcc aagcacatta acicctcctt acactgactg 1377

ttattttaac tgttagtctt atatagtgg gacatcagct gacaaataga cctcagcctc 1437

aaaaggctcg gaaagaaaag aaagaaagaa agaaagaaag aaaaaaaaaa tacaagcaaa 1497

aacgtcatca agaagaagag atcgaaataa gctatgggtt aaacagtgcc agtaactcag 1557

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tatggctgtt tgttctaaaa aaaaaaa 1644

<210> 359

<211> 392

<212> PRT

<213> Mus musculus

<400> 359

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Gln Asp Glu Val Ala Gln Pro Leu Asn Leu Ser Ala Lys Pro Lys Thr

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Ser Asp Gly Lys Ser Pro Ala Ser Pro Thr Ser Pro His Met Pro Ala

35 40 45

Leu Arg Ile Asn Ser Gly Ala Gly Pro Leu Lys Ala Ser Val Pro Ala

50 55 60

Ala Leu Ala Ser Pro Ser Ala Arg Val Ser Thr Ile Gly Tyr Leu Asn

65 70 75 80

Asp His Asp Ala Val Thr Lys Ala Ile Gln Glu Ala Arg Gln Met Lys

85 90 95

Glu Gln Leu Arg Arg Glu Gln Gln Ala Leu Asp Gly Lys Val Ala Val

100 105 110

Val Asn Ser Ile Gly Leu Ser Asn Cys Arg Thr Glu Lys Glu Lys Thr
 115 120 125
 Thr Leu Glu Ser Leu Thr Gln Gln Leu Ala Val Lys Gln Asn Glu Glu
 130 135 140
 Gly Lys Phe Ser His Gly Met Met Asp Phe Asn Met Ser Gly Asp Ser
 145 150 155 160
 Asp Gly Ser Ala Gly Val Ser Glu Ser Arg Ile Tyr Arg Glu Ser Arg
 165 170 175
 Gly Arg Gly Ser Asn Glu Pro His Ile Lys Arg Pro Met Asn Ala Phe
 180 185 190
 Met Val Trp Ala Lys Asp Glu Arg Arg Lys Ile Leu Gln Ala Phe Pro
 195 200 205
 Asp Met His Asn Ser Asn Ile Ser Lys Ile Leu Gly Ser Arg Trp Lys
 210 215 220
 Ala Met Thr Asn Leu Glu Lys Gln Pro Tyr Tyr Glu Glu Gln Ala Arg
 225 230 235 240
 Leu Ser Lys Gln His Leu Glu Lys Tyr Pro Asp Tyr Lys Tyr Lys Pro
 245 250 255
 Arg Pro Lys Arg Thr Cys Leu Val Asp Gly Lys Lys Leu Arg Ile Gly
 260 265 270
 Glu Tyr Lys Ala Ile Met Arg Asn Arg Arg Gln Glu Met Arg Gln Tyr
 275 280 285
 Phe Asn Val Gly Gln Gln Ala Gln Ile Pro Ile Ala Thr Ala Gly Val
 290 295 300
 Val Tyr Pro Gly Ala Ile Ala Met Ala Gly Met Pro Ser Pro His Leu
 305 310 315 320
 Pro Ser Glu His Ser Ser Val Ser Ser Ser Pro Glu Pro Gly Met Pro
 325 330 335
 Val Ile Gln Ser Thr Tyr Gly Ala Lys Gly Glu Glu Pro His Ile Lys

340 345 350
 Glu Glu Ile Gln Ala Glu Asp Ile Asn Gly Glu Ile Tyr Glu Glu Tyr
 355 360 365
 Asp Glu Glu Glu Glu Asp Pro Asp Val Asp Tyr Gly Ser Asp Ser Glu
 370 375 380
 Asn His Ile Ala Gly Gln Ala Asn
 385 390

<210> 360

<211> 2117

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (239).. (1753)

<400> 360

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 agcgttcctg gggttccttc ggcggcgtgg ggcctcgcta aggactcgcc ggccctgtgg 180
 ggcacggcct tagtggcgct ttgcgagtt cacataaata catcttaaaa ccttcaag 238
 atg gtt cta gca gat ctt gga aga aaa ata aca tca gca tta cgc tca 286
 Met Val Leu Ala Asp Leu Gly Arg Lys Ile Thr Ser Ala Leu Arg Ser
 1 5 10 15
 ttg agc aat gcc acc att atc aat gaa gag gta tta aat gct atg ctg 334
 Leu Ser Asn Ala Thr Ile Ile Asn Glu Glu Val Leu Asn Ala Met Leu
 20 25 30
 aaa gaa gta tgt aca gca tta ttg gaa gca gat gtt aat att aaa cta 382

Lys Glu Val Cys Thr Ala Leu Leu Glu Ala Asp Val Asn Ile Lys Leu
 35 40 45
 gig aag caa ctc aga gaa aat gtt aag tct gca att gat ctt gaa gag 430
 Val Lys Gln Leu Arg Glu Asn Val Lys Ser Ala Ile Asp Leu Glu Glu
 50 55 60
 atg gca tct gga ctg aac aaa aga aaa atg att cag cat gct gta ttt 478
 Met Ala Ser Gly Leu Asn Lys Arg Lys Met Ile Gln His Ala Val Phe
 65 70 75 80
 aaa gaa ctt gta aag ctt gta gac cct gga gtt aaa gcg tgg aca ccg 526
 Lys Glu Leu Val Lys Leu Val Asp Pro Gly Val Lys Ala Trp Thr Pro
 85 90 95
 act aag gga aag caa aat gtg atc atg ttt gtt gga ttg caa ggg agt 574
 Thr Lys Gly Lys Gln Asn Val Ile Met Phe Val Gly Leu Gln Gly Ser
 100 105 110
 ggt aaa acg aca aca tgt tca aag tta gca tat tat tac cag agg aaa 622
 Gly Lys Thr Thr Thr Cys Ser Lys Leu Ala Tyr Tyr Tyr Gln Arg Lys
 115 120 125
 ggt tgg aag acc tgt ttg ata tgt gca gat aca ttc aga gca gga gcc 670
 Gly Trp Lys Thr Cys Leu Ile Cys Ala Asp Thr Phe Arg Ala Gly Ala
 130 135 140
 ttt gac cag cta aaa cag aat gcc acc aaa gca aga att ccg ttc tat 718
 Phe Asp Gln Leu Lys Gln Asn Ala Thr Lys Ala Arg Ile Pro Phe Tyr
 145 150 155 160
 ggc agc tat act gaa atg gat cct gtc atc att gct tct gaa gga gtg 766
 Gly Ser Tyr Thr Glu Met Asp Pro Val Ile Ile Ala Ser Glu Gly Val
 165 170 175
 gag aaa ttc aaa aat gaa aat ttt gaa att att att gtt gat aca agt 814
 Glu Lys Phe Lys Asn Glu Asn Phe Glu Ile Ile Ile Val Asp Thr Ser
 180 185 190

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ggg cgt cac aaa caa gaa gac tct tta ttt gaa gaa agg ctt caa gtt 862
Gly Arg His Lys Gln Glu Asp Ser Leu Phe Glu Glu Arg Leu Gln Val
      195              200              205

tct aat gct ata caa cct gat aac att gtt tat gtg atg gat gca tcc 910
Ser Asn Ala Ile Gln Pro Asp Asn Ile Val Tyr Val Met Asp Ala Ser
      210              215              220

atc gga cag gct tgt gag gcc cag gcg aag gct ttt aaa gac aaa gta 958
Ile Gly Gln Ala Cys Glu Ala Gln Ala Lys Ala Phe Lys Asp Lys Val
225              230              235              240

gat gta gct tca gta ata gtg aca aaa ctc gac ggt cat gcg aaa gga 1006
Asp Val Ala Ser Val Ile Val Thr Lys Leu Asp Gly His Ala Lys Gly
      245              250              255

ggc ggt gct ctt agt gca gtt gct gcc aca aaa agt cca att atc ttc 1054
Gly Gly Ala Leu Ser Ala Val Ala Ala Thr Lys Ser Pro Ile Ile Phe
      260              265              270

att ggt aca ggg gaa cat ata gat gat ttt gaa cct ttc aaa aca caa 1102
Ile Gly Thr Gly Glu His Ile Asp Asp Phe Glu Pro Phe Lys Thr Gln
      275              280              285

cct ttc atc agc aaa ctc ctt gga atg ggt gat att gaa gga ctg att 1150
Pro Phe Ile Ser Lys Leu Leu Gly Met Gly Asp Ile Glu Gly Leu Ile
      290              295              300

gat aaa gtc aat gaa ttg aag ttg gat gat aat gag gca ctt ata gag 1198
Asp Lys Val Asn Glu Leu Lys Leu Asp Asp Asn Glu Ala Leu Ile Glu
305              310              315              320

aag ttg aag cac ggt cag ttt aca ttg cga gac atg tat gaa cag ttt 1246
Lys Leu Lys His Gly Gln Phe Thr Leu Arg Asp Met Tyr Glu Gln Phe
      325              330              335

cag aat att atg aaa atg ggc cca ttc agt cag ata ttg ggg atg att 1294
Gln Asn Ile Met Lys Met Gly Pro Phe Ser Gln Ile Leu Gly Met Ile

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340	345	350	
cct ggc ttt ggc aca gat ttt atg agc aaa ggg aat gag cag gag tca			1342
Pro Gly Phe Gly Thr Asp Phe Met Ser Lys Gly Asn Glu Gln Glu Ser			
355	360	365	
atg gca agg ctg aag aaa ctg atg aca atc atg gac agt atg aac gat			1390
Met Ala Arg Leu Lys Lys Leu Met Thr Ile Met Asp Ser Met Asn Asp			
370	375	380	
caa gaa ctg gac agt aca gat ggt gcc aag gtt ttc agt aag caa cca			1438
Gln Glu Leu Asp Ser Thr Asp Gly Ala Lys Val Phe Ser Lys Gln Pro			
385	390	395	400
ggg aga atc caa aga gtt gcc cgg gga tca ggt gtg tca aca aga gat			1486
Gly Arg Ile Gln Arg Val Ala Arg Gly Ser Gly Val Ser Thr Arg Asp			
405	410	415	
gtt caa gaa ctt ctg acc cag tat acc aag ttt gca cag atg gtc aaa			1534
Val Gln Glu Leu Leu Thr Gln Tyr Thr Lys Phe Ala Gln Met Val Lys			
420	425	430	
aag atg gga ggt atc aaa gga ctt ttc aaa ggc ggt gat atg tct aag			1582
Lys Met Gly Gly Ile Lys Gly Leu Phe Lys Gly Gly Asp Met Ser Lys			
435	440	445	
aat gtg agt cag tca cag atg gca aaa tta aac caa caa atg gcc aaa			1630
Asn Val Ser Gln Ser Gln Met Ala Lys Leu Asn Gln Gln Met Ala Lys			
450	455	460	
atg atg gac cca cga gtt ctt cat cac atg ggt ggc atg gcc ggc ctt			1678
Met Met Asp Pro Arg Val Leu His His Met Gly Gly Met Ala Gly Leu			
465	470	475	480
cag tca atg atg cgg cag ttt cag cag ggt gct gct ggc aac atg aaa			1726
Gln Ser Met Met Arg Gln Phe Gln Gln Gly Ala Ala Gly Asn Met Lys			
485	490	495	
ggc atg atg gga ttc aat aac atg taa agacgcccc ttactaggaa			1773

Gly Met Met Gly Phe Asn Asn Met

500

505

cigacaaggt ggatgatgtc atctgctgag acctcacact ttctctccct cttgcaaacg 1833
 gggaagaagg atattcttgc ctgtcttgcc ttcgttcttt tgtctcaccg ttttccttgt 1893
 ctcccttccc ttctgaagtt cggaagagt gccctggtttt tgtggaagtc atcatttctg 1953
 ctttaaactt attagttttc aacgtcctaa cacttcttaa gttaaacaaa tcatgatgta 2013
 aaattttggg atttaaaggt ttttaattgt ctcaaaggcc aagcattaca tttataaaca 2073
 gttgcgatca gtaaattaca tgataattgaa gaaagigcig cccg 2117

<210> 361

<211> 504

<212> PRT

<213> Mus musculus

<400> 361

Met Val Leu Ala Asp Leu Gly Arg Lys Ile Thr Ser Ala Leu Arg Ser
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 Leu Ser Asn Ala Thr Ile Ile Asn Glu Glu Val Leu Asn Ala Met Leu
 20 25 30
 Lys Glu Val Cys Thr Ala Leu Leu Glu Ala Asp Val Asn Ile Lys Leu
 35 40 45
 Val Lys Gln Leu Arg Glu Asn Val Lys Ser Ala Ile Asp Leu Glu Glu
 50 55 60
 Met Ala Ser Gly Leu Asn Lys Arg Lys Met Ile Gln His Ala Val Phe
 65 70 75 80
 Lys Glu Leu Val Lys Leu Val Asp Pro Gly Val Lys Ala Trp Thr Pro
 85 90 95
 Thr Lys Gly Lys Gln Asn Val Ile Met Phe Val Gly Leu Gln Gly Ser
 100 105 110

Gly Lys Thr Thr Thr Cys Ser Lys Leu Ala Tyr Tyr Tyr Gln Arg Lys
 115 120 125
 Gly Trp Lys Thr Cys Leu Ile Cys Ala Asp Thr Phe Arg Ala Gly Ala
 130 135 140
 Phe Asp Gln Leu Lys Gln Asn Ala Thr Lys Ala Arg Ile Pro Phe Tyr
 145 150 155 160
 Gly Ser Tyr Thr Glu Met Asp Pro Val Ile Ile Ala Ser Glu Gly Val
 165 170 175
 Glu Lys Phe Lys Asn Glu Asn Phe Glu Ile Ile Ile Val Asp Thr Ser
 180 185 190
 Gly Arg His Lys Gln Glu Asp Ser Leu Phe Glu Glu Arg Leu Gln Val
 195 200 205
 Ser Asn Ala Ile Gln Pro Asp Asn Ile Val Tyr Val Met Asp Ala Ser
 210 215 220
 Ile Gly Gln Ala Cys Glu Ala Gln Ala Lys Ala Phe Lys Asp Lys Val
 225 230 235 240
 Asp Val Ala Ser Val Ile Val Thr Lys Leu Asp Gly His Ala Lys Gly
 245 250 255
 Gly Gly Ala Leu Ser Ala Val Ala Ala Thr Lys Ser Pro Ile Ile Phe
 260 265 270
 Ile Gly Thr Gly Glu His Ile Asp Asp Phe Glu Pro Phe Lys Thr Gln
 275 280 285
 Pro Phe Ile Ser Lys Leu Leu Gly Met Gly Asp Ile Glu Gly Leu Ile
 290 295 300
 Asp Lys Val Asn Glu Leu Lys Leu Asp Asp Asn Glu Ala Leu Ile Glu
 305 310 315 320
 Lys Leu Lys His Gly Gln Phe Thr Leu Arg Asp Met Tyr Glu Gln Phe
 325 330 335
 Gln Asn Ile Met Lys Met Gly Pro Phe Ser Gln Ile Leu Gly Met Ile

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<222> (94).. (354)

<400> 362

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 tcgcggcctt gttcctcgct gccitgaagcc acg atg cct cag ttc cag acc tgg 114

Met Pro Gln Phe Gln Thr Trp

1

5

gag gag ttc agc cgg gcg gcc gag aag ctc tac ctg gcg gac ccc atg 162
 Glu Glu Phe Ser Arg Ala Ala Glu Lys Leu Tyr Leu Ala Asp Pro Met

10

15

20

aag gta cgg gtg gtt ctc aaa tac agg cat gtt gat ggg aat ttg tgt 210
 Lys Val Arg Val Val Leu Lys Tyr Arg His Val Asp Gly Asn Leu Cys

25

30

35

atc aaa gta acg gat gat cta gtt tgt ttg gtg tac aga aca gac caa 258
 Ile Lys Val Thr Asp Asp Leu Val Cys Leu Val Tyr Arg Thr Asp Gln

40

45

50

55

gcg caa gac gta aag aag att gag aaa ttc cac agt cag tta atg cga 306
 Ala Gln Asp Val Lys Lys Ile Glu Lys Phe His Ser Gln Leu Met Arg

60

65

70

cit atg gtg gcc aag gaa tcc cgc aat gtc act atg gaa aca gaa tga 354
 Leu Met Val Ala Lys Glu Ser Arg Asn Val Thr Met Glu Thr Glu

75

80

85

atggtttgac atgaagacga ctgttccgtt attgggaagt aatcagcttt tgaaactgag 414
 agtgttggga aggatataact tacgtaatgg agctgtcaaa gccgagagac cagccitgcgt 474
 cctaaagttt gctttagaga gtaggaatgt cggggtttcc agttagaaaa cttttatttt 534
 tggaaacgga ataaaaatct cttagaaact tttgcagata atttgatgtc gggcaaatat 594
 atataattat tttttctggt aaattcatgt cagtaatttg ttgaagagtt aacaagaaaa 654
 ggtctttcta gattgtgtct aagatgaaat aaaaat 689

<210> 363

<211> 86

<212> PRT

<213> Mus musculus

<400> 363

Met Pro Gln Phe Gln Thr Trp Glu Glu Phe Ser Arg Ala Ala Glu Lys
1 5 10 15
Leu Tyr Leu Ala Asp Pro Met Lys Val Arg Val Val Leu Lys Tyr Arg
20 25 30
His Val Asp Gly Asn Leu Cys Ile Lys Val Thr Asp Asp Leu Val Cys
35 40 45
Leu Val Tyr Arg Thr Asp Gln Ala Gln Asp Val Lys Lys Ile Glu Lys
50 55 60
Phe His Ser Gln Leu Met Arg Leu Met Val Ala Lys Glu Ser Arg Asn
65 70 75 80
Val Thr Met Glu Thr Glu
85

<210> 364

<211> 950

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (28).. (891)

<400> 364

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Met Glu Lys Lys Pro Ala Ala Lys Lys

1

5

gct ggc agt gat gct gct gcc tcc cgg ccc cgg gcc gcc aaa gta gcc 102

Ala Gly Ser Asp Ala Ala Ala Ser Arg Pro Arg Ala Ala Lys Val Ala

10

15

20

25

aaa aag gtt cac cct aag ggt aaa aag ccc aag aag gcg aag ccc cat 150

Lys Lys Val His Pro Lys Gly Lys Lys Pro Lys Lys Ala Lys Pro His

30

35

40

tgc agc cga aac cct gtc ctg gtg aga gga att ggc agg tac tcc cga 198

Cys Ser Arg Asn Pro Val Leu Val Arg Gly Ile Gly Arg Tyr Ser Arg

45

50

55

tct gct atg tac tcc agg aag gcc ttg tac aaa agg aaa tac tcg gct 246

Ser Ala Met Tyr Ser Arg Lys Ala Leu Tyr Lys Arg Lys Tyr Ser Ala

60

65

70

gcc aag acc aag gtt gag aag aag aag aaa aaa gag aag gtc ctt gct 294

Ala Lys Thr Lys Val Glu Lys Lys Lys Lys Lys Glu Lys Val Leu Ala

75

80

85

act gtc acc aaa aca gtt ggt ggg gac aag aac ggt ggc acc cgg gtg 342

Thr Val Thr Lys Thr Val Gly Gly Asp Lys Asn Gly Gly Thr Arg Val

90

95

100

105

gtg aag ctt cga aaa atg cct agg tat tat ccc acc gaa gat gtt cct 390

Val Lys Leu Arg Lys Met Pro Arg Tyr Tyr Pro Thr Glu Asp Val Pro

110

115

120

cgg aag ctg ctg agc cac ggc aag aag ccc ttc agc cag cac gtg aga 438

Arg Lys Leu Leu Ser His Gly Lys Lys Pro Phe Ser Gln His Val Arg

125

130

135

agg cta cgc tcc agc atc act ccc gga act gtc ctg atc atc ctc act 486

Arg Leu Arg Ser Ser Ile Thr Pro Gly Thr Val Leu Ile Ile Leu Thr

140	145	150	
ggg cgc cac agg ggc aag aga gtg gtt ttc ctg aag cag ctg gac agt			534
Gly Arg His Arg Gly Lys Arg Val Val Phe Leu Lys Gln Leu Asp Ser			
155	160	165	
ggc ttg ctg ctt gtg act ggg cct ctt gtc atc aac aga gtt cct ctg			582
Gly Leu Leu Leu Val Thr Gly Pro Leu Val Ile Asn Arg Val Pro Leu			
170	175	180	185
cgc aga aca cac cag aag ttt gtc att gcc acc tct aca aaa gtt gat			630
Arg Arg Thr His Gln Lys Phe Val Ile Ala Thr Ser Thr Lys Val Asp			
190	195	200	
atc agc gat gtt aaa atc ccc aaa cac ctg act gac gct tac ttc aag			678
Ile Ser Asp Val Lys Ile Pro Lys His Leu Thr Asp Ala Tyr Phe Lys			
205	210	215	
aag aag cag ctg cgc aag ccc agg cat cag gag ggc gag atc ttc gac			726
Lys Lys Gln Leu Arg Lys Pro Arg His Gln Glu Gly Glu Ile Phe Asp			
220	225	230	
aca gag aag gag aaa tac gag att aca gag cag cga aag gct gac cag			774
Thr Glu Lys Glu Lys Tyr Glu Ile Thr Glu Gln Arg Lys Ala Asp Gln			
235	240	245	
aaa gct gtg gat ttg cag att ttg cca aag att aaa gct gtt cct cag			822
Lys Ala Val Asp Leu Gln Ile Leu Pro Lys Ile Lys Ala Val Pro Gln			
250	255	260	265
ctc cag ggc tac ctg cgc tct cag ttt tcc ctg aca aac ggg atg tat			870
Leu Gln Gly Tyr Leu Arg Ser Gln Phe Ser Leu Thr Asn Gly Met Tyr			
270	275	280	
cct cac aaa ctg gtc ttc taa attgttaacc taattaaaca gcttcatagg			921
Pro His Lys Leu Val Phe			
285			
ttaaaaaaaa aaaaaaaaaa aaccittaag			950

<210> 365

<211> 287

<212> PRT

<213> Mus musculus

<400> 365

Met Glu Lys Lys Pro Ala Ala Lys Lys Ala Gly Ser Asp Ala Ala Ala

1 5 10 15

Ser Arg Pro Arg Ala Ala Lys Val Ala Lys Lys Val His Pro Lys Gly

20 25 30

Lys Lys Pro Lys Lys Ala Lys Pro His Cys Ser Arg Asn Pro Val Leu

35 40 45

Val Arg Gly Ile Gly Arg Tyr Ser Arg Ser Ala Met Tyr Ser Arg Lys

50 55 60

Ala Leu Tyr Lys Arg Lys Tyr Ser Ala Ala Lys Thr Lys Val Glu Lys

65 70 75 80

Lys Lys Lys Lys Glu Lys Val Leu Ala Thr Val Thr Lys Thr Val Gly

85 90 95

Gly Asp Lys Asn Gly Gly Thr Arg Val Val Lys Leu Arg Lys Met Pro

100 105 110

Arg Tyr Tyr Pro Thr Glu Asp Val Pro Arg Lys Leu Leu Ser His Gly

115 120 125

Lys Lys Pro Phe Ser Gln His Val Arg Arg Leu Arg Ser Ser Ile Thr

130 135 140

Pro Gly Thr Val Leu Ile Ile Leu Thr Gly Arg His Arg Gly Lys Arg

145 150 155 160

Val Val Phe Leu Lys Gln Leu Asp Ser Gly Leu Leu Leu Val Thr Gly

165 170 175

Pro Leu Val Ile Asn Arg Val Pro Leu Arg Arg Thr His Gln Lys Phe
 180 185 190
 Val Ile Ala Thr Ser Thr Lys Val Asp Ile Ser Asp Val Lys Ile Pro
 195 200 205
 Lys His Leu Thr Asp Ala Tyr Phe Lys Lys Lys Gln Leu Arg Lys Pro
 210 215 220
 Arg His Gln Glu Gly Glu Ile Phe Asp Thr Glu Lys Glu Lys Tyr Glu
 225 230 235 240
 Ile Thr Glu Gln Arg Lys Ala Asp Gln Lys Ala Val Asp Leu Gln Ile
 245 250 255
 Leu Pro Lys Ile Lys Ala Val Pro Gln Leu Gln Gly Tyr Leu Arg Ser
 260 265 270
 Gln Phe Ser Leu Thr Asn Gly Met Tyr Pro His Lys Leu Val Phe
 275 280 285

<210> 366

<211> 1836

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (89).. (1216)

<400> 366

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 gtgactgggc ggtgcggcgc cggagacg atg ccg ttt cca gtt aca acg cag 112

Met Pro Phe Pro Val Thr Thr Gln

1

5

gga tca caa caa acg cag cca cca cag agg cac tat ggc att acc tct 160
 Gly Ser Gln Gln Thr Gln Pro Pro Gln Arg His Tyr Gly Ile Thr Ser
 10 15 20
 cct atc agc tta gcg gcc ccc aag gag act gac tgc cta ctc aca cag 208
 Pro Ile Ser Leu Ala Ala Pro Lys Glu Thr Asp Cys Leu Leu Thr Gln
 25 30 35 40
 aag ctc atc gag acg ctg ttg ccc ttt ggg gtt ttt gaa gaa gaa gag 256
 Lys Leu Ile Glu Thr Leu Leu Pro Phe Gly Val Phe Glu Glu Glu Glu
 45 50 55
 gaa ctg cag cgc agg att tta att ttg gga aaa tta aat aac ctg gtg 304
 Glu Leu Gln Arg Arg Ile Leu Ile Leu Gly Lys Leu Asn Asn Leu Val
 60 65 70
 aaa gaa tgg att cga gaa atc agt gaa agc aag aat ctc cca caa tct 352
 Lys Glu Trp Ile Arg Glu Ile Ser Glu Ser Lys Asn Leu Pro Gln Ser
 75 80 85
 gta att gaa aat gtt gga ggg aag att ttt aca ttt gga tct tac aga 400
 Val Ile Glu Asn Val Gly Gly Lys Ile Phe Thr Phe Gly Ser Tyr Arg
 90 95 100
 cta gga gtc cac acg aaa ggt gct gat att gat gcg ttg tgt gtt gca 448
 Leu Gly Val His Thr Lys Gly Ala Asp Ile Asp Ala Leu Cys Val Ala
 105 110 115 120
 cca aga cat gtt gat cga agt gac ttt ttc acc tca ttc tat gat aaa 496
 Pro Arg His Val Asp Arg Ser Asp Phe Phe Thr Ser Phe Tyr Asp Lys
 125 130 135
 ttg aaa tta caa gaa gaa gtg aaa gat tta aga gct gtt gaa gag gca 544
 Leu Lys Leu Gln Glu Glu Val Lys Asp Leu Arg Ala Val Glu Glu Ala
 140 145 150
 ttt gta cca gtt atc aaa ctc tgt ttt gat gga ata gag att gat att 592
 Phe Val Pro Val Ile Lys Leu Cys Phe Asp Gly Ile Glu Ile Asp Ile

155	160	165	
ttg ttt gca aga tta gca ctg cag act att cca gaa gat ttg gac cta	640		
Leu Phe Ala Arg Leu Ala Leu Gln Thr Ile Pro Glu Asp Leu Asp Leu			
170	175	180	
cga gat gac agt ctg ctt aaa aac cta gat ata aga tgc ata aga agc	688		
Arg Asp Asp Ser Leu Leu Lys Asn Leu Asp Ile Arg Cys Ile Arg Ser			
185	190	195	200
ctt aat ggt tgc agg gta acc gat gaa att tta cat cta gta cca aac	736		
Leu Asn Gly Cys Arg Val Thr Asp Glu Ile Leu His Leu Val Pro Asn			
205	210	215	
att gac aac ttc agg tta act ctg aga gcc atc aaa ctg tgg gcc aaa	784		
Ile Asp Asn Phe Arg Leu Thr Leu Arg Ala Ile Lys Leu Trp Ala Lys			
220	225	230	
cgg cac aac atc tat tcc aat ata tta ggt ttc ctc ggt ggt gtt tcc	832		
Arg His Asn Ile Tyr Ser Asn Ile Leu Gly Phe Leu Gly Gly Val Ser			
235	240	245	
tgg gct atg cta gta gca aga act tgc cag ctt tat cca aat gca ata	880		
Trp Ala Met Leu Val Ala Arg Thr Cys Gln Leu Tyr Pro Asn Ala Ile			
250	255	260	
gca tca act ctt gta cat aaa ttt ttc ttg gta ttt tct aaa tgg gaa	928		
Ala Ser Thr Leu Val His Lys Phe Phe Leu Val Phe Ser Lys Trp Glu			
265	270	275	280
tgg cca aat cca gtg cta ttg aaa cag cct gaa gaa tgc aat ctt aat	976		
Trp Pro Asn Pro Val Leu Leu Lys Gln Pro Glu Glu Cys Asn Leu Asn			
285	290	295	
ttg cct gtg tgg gac cca agg gta aac ccc agt gat agg tac cat ctt	1024		
Leu Pro Val Trp Asp Pro Arg Val Asn Pro Ser Asp Arg Tyr His Leu			
300	305	310	
atg cct ata att aca cca gca tac cca cag cag aac tcc acg tac aat	1072		

Met Pro Ile Ile Thr Pro Ala Tyr Pro Gln Gln Asn Ser Thr Tyr Asn
 315 320 325
 gtg tcc gtt tca aca cgg atg gtc atg gtt gag gag ttt aaa caa ggt 1120
 Val Ser Val Ser Thr Arg Met Val Met Val Glu Glu Phe Lys Gln Gly
 330 335 340
 ctt gct atc aca gat gaa att ttg ctg agt aag gca gag tgg tcc aaa 1168
 Leu Ala Ile Thr Asp Glu Ile Leu Leu Ser Lys Ala Glu Trp Ser Lys
 345 350 355 360
 ctt ttt gaa gct cca aac ttc ttt cag aag tac aag tat gta ttt taa 1216
 Leu Phe Glu Ala Pro Asn Phe Phe Gln Lys Tyr Lys Tyr Val Phe
 365 370 375
 .ggcatgtcag ccatgttgct cttaagtagt gggttaacag tggcatttgt ggtatttcct 1276
 ctigccagat tcgtgaacaa gtctctctcc agtgcctgta gaattttctt tattgttaaa 1336
 aagggccttag agtttttagt aaactgggtgt ticccttcat cagtacaggg tgtagcctc 1396
 acactttagt tgccttgactt actagcagtc ctactatgtg tcagccgcct cagttcttct 1456
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 ttagaccatg cacagacctt gtgaaacgtc ggcgtttggc tgaatacagg ttttcaatca 1636
 ttagtagcac atttccccct tcgaaaaata tgtctgcaaa tagttttcta ataatttaag 1696
 tgggtatcat ttttattaat gtcitttaat ttaatgcitt aataccttag aggtgaaaaa 1756
 gccacatgat ttgtgctgtg ttggaaatgt aagttacaat aaatcttaaa aaaagaacaa 1816
 gaaaaaaaaa aaaaaaaaaa 1836

<210> 367

<211> 375

<212> PRT

<213> Mus musculus

<400> 367

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 Gln Arg His Tyr Gly Ile Thr Ser Pro Ile Ser Leu Ala Ala Pro Lys
 20 25 30
 Glu Thr Asp Cys Leu Leu Thr Gln Lys Leu Ile Glu Thr Leu Leu Pro
 35 40 45
 Phe Gly Val Phe Glu Glu Glu Glu Glu Leu Gln Arg Arg Ile Leu Ile
 50 55 60
 Leu Gly Lys Leu Asn Asn Leu Val Lys Glu Trp Ile Arg Glu Ile Ser
 65 70 75 80
 Glu Ser Lys Asn Leu Pro Gln Ser Val Ile Glu Asn Val Gly Gly Lys
 85 90 95
 Ile Phe Thr Phe Gly Ser Tyr Arg Leu Gly Val His Thr Lys Gly Ala
 100 105 110
 Asp Ile Asp Ala Leu Cys Val Ala Pro Arg His Val Asp Arg Ser Asp
 115 120 125
 Phe Phe Thr Ser Phe Tyr Asp Lys Leu Lys Leu Gln Glu Glu Val Lys
 130 135 140
 Asp Leu Arg Ala Val Glu Glu Ala Phe Val Pro Val Ile Lys Leu Cys
 145 150 155 160
 Phe Asp Gly Ile Glu Ile Asp Ile Leu Phe Ala Arg Leu Ala Leu Gln
 165 170 175
 Thr Ile Pro Glu Asp Leu Asp Leu Arg Asp Asp Ser Leu Leu Lys Asn
 180 185 190
 Leu Asp Ile Arg Cys Ile Arg Ser Leu Asn Gly Cys Arg Val Thr Asp
 195 200 205
 Glu Ile Leu His Leu Val Pro Asn Ile Asp Asn Phe Arg Leu Thr Leu
 210 215 220
 Arg Ala Ile Lys Leu Trp Ala Lys Arg His Asn Ile Tyr Ser Asn Ile

225 230 235 240
 Leu Gly Phe Leu Gly Gly Val Ser Trp Ala Met Leu Val Ala Arg Thr
 245 250 255
 Cys Gln Leu Tyr Pro Asn Ala Ile Ala Ser Thr Leu Val His Lys Phe
 260 265 270
 Phe Leu Val Phe Ser Lys Trp Glu Trp Pro Asn Pro Val Leu Leu Lys
 275 280 285
 Gln Pro Glu Glu Cys Asn Leu Asn Leu Pro Val Trp Asp Pro Arg Val
 290 295 300
 Asn Pro Ser Asp Arg Tyr His Leu Met Pro Ile Ile Thr Pro Ala Tyr
 305 310 315 320
 Pro Gln Gln Asn Ser Thr Tyr Asn Val Ser Val Ser Thr Arg Met Val
 325 330 335
 Met Val Glu Glu Phe Lys Gln Gly Leu Ala Ile Thr Asp Glu Ile Leu
 340 345 350
 Leu Ser Lys Ala Glu Trp Ser Lys Leu Phe Glu Ala Pro Asn Phe Phe
 355 360 365
 Gln Lys Tyr Lys Tyr Val Phe
 370 375

<210> 368

<211> 596

<212> DNA

<213> Mus musculus

<400> 368

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 cagtacttta tctcaggagg gcattcttat gaactcaaca ggacaaatcc cattgggtatg 120
 aaaggcatat ggtaaattgt atggcgattt ggtgcaagaa ctttggagtg gaactcagaa 180

gaatgttgcc cccttaaagc tccggtggac catagcaaaa tatgctccca ggtttaatgg 240
 attccagcaa caagactccc aagaacttct ggctttcctc ttggatggtc ttcatgaaga 300
 tctcaaccga gtccacgaga aaccataatgt agaactaaaa gacagtgacg gccgaccgga 360
 ctgggaagta gctgcagagg cctggggaca accatctaag gagaaataga tcaattgttg 420
 tggacttggt ccatggtcag ctaagatccc aagticaaatg caagacaatgt gggcatataa 480
 gtgtccgatt cgaccctttt aattttttgt ctttacactt acaatggaca gttacatgca 540
 ttttagaata cagtaattaa ttagatggta ctaccgcata cggtatggct aagctg 596

<210> 369

<211> 2898

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (183).. (2699)

<400> 369

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 cgccctgccc tagattttcc gatagagagt gggtcctctc ctttgcttct cgcaggagtc 120
 gcagcggccg cagtggggac ccgcagcggg acgcggtctc cgcagcccg gccttaagcg 180
 gg atg tgc gtg gtg ggc att gac ctc ggc ttc ctc aac tgc tac atc 227
 Met Ser Val Val Gly Ile Asp Leu Gly Phe Leu Asn Cys Tyr Ile
 1 5 10 15
 gct gta gcg agg agc ggc ggc atc gag acc atc gcc aac gag tac agc 275
 Ala Val Ala Arg Ser Gly Gly Ile Glu Thr Ile Ala Asn Glu Tyr Ser
 20 25 30
 gac agg tgc acg ccg gcc tgt ata tct ttg gga tcc aga act cga gcc 323
 Asp Arg Cys Thr Pro Ala Cys Ile Ser Leu Gly Ser Arg Thr Arg Ala

35	40	45	
att gga aat gca gct aag agc cag ata gtc aca aat gta aga aat aca			371
Ile Gly Asn Ala Ala Lys Ser Gln Ile Val Thr Asn Val Arg Asn Thr			
50	55	60	
att cat ggc ttc aaa aag ctt cat ggg cga tca ttt gat gac ccc att			419
Ile His Gly Phe Lys Lys Leu His Gly Arg Ser Phe Asp Asp Pro Ile			
65	70	75	
gtg caa acg gag agg atc agg ctt ccg tac gag ctg cag aag atg cct			467
Val Gln Thr Glu Arg Ile Arg Leu Pro Tyr Glu Leu Gln Lys Met Pro			
80	85	90	95
aat gga agt aca ggt gtt aag gtg cgg tac ctg gaa gaa gag cgg ccc			515
Asn Gly Ser Thr Gly Val Lys Val Arg Tyr Leu Glu Glu Glu Arg Pro			
100	105	110	
ttt gca att gag caa gtc act ggg atg ttg ctg gct aag ctt aaa gag			563
Phe Ala Ile Glu Gln Val Thr Gly Met Leu Leu Ala Lys Leu Lys Glu			
115	120	125	
acc tca gaa aat gct ctg aag aag cca gtg gct gac tgt gtg atc tcg			611
Thr Ser Glu Asn Ala Leu Lys Lys Pro Val Ala Asp Cys Val Ile Ser			
130	135	140	
atc ccg agc ttt ttc acc gac gca gag aga aga tcc gtg atg gcc gca			659
Ile Pro Ser Phe Phe Thr Asp Ala Glu Arg Arg Ser Val Met Ala Ala			
145	150	155	
gcc cag gtt gca ggc cta aac tgt ctg agg ctg atg aat gaa acc act			707
Ala Gln Val Ala Gly Leu Asn Cys Leu Arg Leu Met Asn Glu Thr Thr			
160	165	170	175
gca gtt gca ctg gca tat gga att tat aag cag gat ctt ccc tca tta			755
Ala Val Ala Leu Ala Tyr Gly Ile Tyr Lys Gln Asp Leu Pro Ser Leu			
180	185	190	
gat gag aaa cca agg aat gtt gtg ttt atc gac atg gga cat tct gcc			803

Asp Glu Lys Pro Arg Asn Val Val Phe Ile Asp Met Gly His Ser Ala
 195 200 205
 tac cag gtc tct gtt tgt gct ttt aac aaa gga aaa ctg aaa gtg ttg 851
 Tyr Gln Val Ser Val Cys Ala Phe Asn Lys Gly Lys Leu Lys Val Leu
 210 215 220
 gct act acc ttt gac cca tat ttg ggt ggc agg aac ttt gat gag gct 899
 Ala Thr Thr Phe Asp Pro Tyr Leu Gly Gly Arg Asn Phe Asp Glu Ala
 225 230 235
 tta gta gac tac ttc tgc gat gaa ttc aag acc aaa tat aag ata aat 947
 Leu Val Asp Tyr Phe Cys Asp Glu Phe Lys Thr Lys Tyr Lys Ile Asn
 240 245 250 255
 gtc aaa gag aac tcg cgg gcc ttg ttg cgg ctg tat cag gag tgt gaa 995
 Val Lys Glu Asn Ser Arg Ala Leu Leu Arg Leu Tyr Gln Glu Cys Glu
 260 265 270
 aaa cta aag aag ctg atg agt gca aac gcg tca gac ctt ccc ctg aac 1043
 Lys Leu Lys Lys Leu Met Ser Ala Asn Ala Ser Asp Leu Pro Leu Asn
 275 280 285
 atc gag tgt ttc atg aat gac ctt gat gtt tct agt aag atg aac agg 1091
 Ile Glu Cys Phe Met Asn Asp Leu Asp Val Ser Ser Lys Met Asn Arg
 290 295 300
 gct caa ttt gag cag ttg tgt gct tcc ctc tta gcc agg gtt gaa cca 1139
 Ala Gln Phe Glu Gln Leu Cys Ala Ser Leu Leu Ala Arg Val Glu Pro
 305 310 315
 cct tta aaa tca gta atg gat caa gct aac tta caa cgt gaa gac ata 1187
 Pro Leu Lys Ser Val Met Asp Gln Ala Asn Leu Gln Arg Glu Asp Ile
 320 325 330 335
 aat agc ata gag att gtg gga ggg gcc acg cgg att cct gca gtc aag 1235
 Asn Ser Ile Glu Ile Val Gly Gly Ala Thr Arg Ile Pro Ala Val Lys
 340 345 350

gag cag gtg act agg ttc ttt ctg aaa gac atc agt acc acc ctg aat 1283
 Glu Gln Val Thr Arg Phe Phe Leu Lys Asp Ile Ser Thr Thr Leu Asn
 355 360 365
 gct gat gaa gct gtc gcc cga gga tgt gcg ttg cag tgt gcg att ctc 1331
 Ala Asp Glu Ala Val Ala Arg Gly Cys Ala Leu Gln Cys Ala Ile Leu
 370 375 380
 tca cca gca ttt aaa gta cgt gaa ttt tcc ata act gac ctt gtt ccc 1379
 Ser Pro Ala Phe Lys Val Arg Glu Phe Ser Ile Thr Asp Leu Val Pro
 385 390 395
 tac tca gtc aca tta agg tgg aag act tct ttt gaa gaa ggg act ggg 1427
 Tyr Ser Val Thr Leu Arg Trp Lys Thr Ser Phe Glu Glu Gly Thr Gly
 400 405 410 415
 gaa tgt gaa gtc ttc tct aag aac cac ccg gcc cca ttc tca aag gtc 1475
 Glu Cys Glu Val Phe Ser Lys Asn His Pro Ala Pro Phe Ser Lys Val
 420 425 430
 ata act ttc cac aag aag gaa cca ttt gaa cta gaa gca ttt tat act 1523
 Ile Thr Phe His Lys Lys Glu Pro Phe Glu Leu Glu Ala Phe Tyr Thr
 435 440 445
 aat ttg cat gaa gtg cct tat cct gat cca aga att gga aac ttc act 1571
 Asn Leu His Glu Val Pro Tyr Pro Asp Pro Arg Ile Gly Asn Phe Thr
 450 455 460
 att cag aat gtt ttc cca cag tct gat ggt gac agt tct aaa gta aaa 1619
 Ile Gln Asn Val Phe Pro Gln Ser Asp Gly Asp Ser Ser Lys Val Lys
 465 470 475
 gtt aaa gtt cgt att aat atc cat gga atc ttc agt gtg gcc agt gcg 1667
 Val Lys Val Arg Ile Asn Ile His Gly Ile Phe Ser Val Ala Ser Ala
 480 485 490 495
 tca gta att gag aag cag aat ctg gaa ggt gat cat aac gat gcc gct 1715
 Ser Val Ile Glu Lys Gln Asn Leu Glu Gly Asp His Asn Asp Ala Ala

500	505	510	
atg gag acg gaa gct cct aag agt gaa ggc aaa gag gat gtg gac aaa	1763		
Met Glu Thr Glu Ala Pro Lys Ser Glu Gly Lys Glu Asp Val Asp Lys			
515	520	525	
atg cag gtt gac caa gaa gaa gga ggt cat cag aaa tgt cat gct gag	1811		
Met Gln Val Asp Gln Glu Glu Gly Gly His Gln Lys Cys His Ala Glu			
530	535	540	
cac acc cca gaa gag gag att gac cac acc ggg gcc aaa gca aag gca	1859		
His Thr Pro Glu Glu Glu Ile Asp His Thr Gly Ala Lys Ala Lys Ala			
545	550	555	
cct cct tca gat aag caa gat cgc ata aat caa act att aaa aaa ggg	1907		
Pro Pro Ser Asp Lys Gln Asp Arg Ile Asn Gln Thr Ile Lys Lys Gly			
560	565	570	575
aaa atc aag agt att gat cta cct atc cag agt agc ctc tac aga cag	1955		
Lys Ile Lys Ser Ile Asp Leu Pro Ile Gln Ser Ser Leu Tyr Arg Gln			
580	585	590	
ctg act caa gac ctt ctc aat agt tac att gaa aat gag ggg aag atg	2003		
Leu Thr Gln Asp Leu Leu Asn Ser Tyr Ile Glu Asn Glu Gly Lys Met			
595	600	605	
ata atg cag gat aaa tta gag aaa gaa aga aat gat gct aaa aat gct	2051		
Ile Met Gln Asp Lys Leu Glu Lys Glu Arg Asn Asp Ala Lys Asn Ala			
610	615	620	
gtt gaa gaa tac gtc tat gat ttc aga gac aaa ttg ggc act gtc tac	2099		
Val Glu Glu Tyr Val Tyr Asp Phe Arg Asp Lys Leu Gly Thr Val Tyr			
625	630	635	
gaa aag ttc atc act cca gaa gac atg aat aag ctg tct gca atg tta	2147		
Glu Lys Phe Ile Thr Pro Glu Asp Met Asn Lys Leu Ser Ala Met Leu			
640	645	650	655
gaa gac aca gaa aat tgg ctg tat gaa gaa gga gaa gac cag cct aaa	2195		

Glu Asp Thr Glu Asn Trp Leu Tyr Glu Glu Gly Glu Asp Gln Pro Lys	
660	665
670	
caa gtt tat gtg gat agg ctg cag gaa tta aag aaa tat ggc cag ccc	2243
Gln Val Tyr Val Asp Arg Leu Gln Glu Leu Lys Lys Tyr Gly Gln Pro	
675	680
685	
att caa atg aag tac gtg gag cat gaa gag aga cca aaa gct tta aat	2291
Ile Gln Met Lys Tyr Val Glu His Glu Glu Arg Pro Lys Ala Leu Asn	
690	695
700	
gac ttg ggg aaa aag att cag ctt gtc ctg aaa gtg ata gaa gca cac	2339
Asp Leu Gly Lys Lys Ile Gln Leu Val Leu Lys Val Ile Glu Ala His	
705	710
715	
aga aac aag gat gaa aga tat gat cat ctg gat cct gct gaa atg gaa	2387
Arg Asn Lys Asp Glu Arg Tyr Asp His Leu Asp Pro Ala Glu Met Glu	
720	725
730	735
aga gtt gaa aag tac atc agt gac tcc atg aac tgg cta aac agt aag	2435
Arg Val Glu Lys Tyr Ile Ser Asp Ser Met Asn Trp Leu Asn Ser Lys	
740	745
750	
atg aat gca cag aat aaa tta agt ctc act caa gat ccc gtg gta aaa	2483
Met Asn Ala Gln Asn Lys Leu Ser Leu Thr Gln Asp Pro Val Val Lys	
755	760
765	
gtg tca gaa ata gtt aca aag tca atg gaa ctg gat aat ttc tgt aac	2531
Val Ser Glu Ile Val Thr Lys Ser Met Glu Leu Asp Asn Phe Cys Asn	
770	775
780	
ccc atc gtt tat aag ccc aaa cca aaa gta gaa gct cct gaa gac aaa	2579
Pro Ile Val Tyr Lys Pro Lys Pro Lys Val Glu Ala Pro Glu Asp Lys	
785	790
795	
gca aaa act ggt agt gag cac aat gga cca atg gac gga cag agt ggt	2627
Ala Lys Thr Gly Ser Glu His Asn Gly Pro Met Asp Gly Gln Ser Gly	
800	805
810	815

tca gag acc agc cca gat cca ccc aaa gga agc tca cag cac acc gac 2675
 Ser Glu Thr Ser Pro Asp Pro Pro Lys Gly Ser Ser Gln His Thr Asp

820

825

830

tcc gga gag atg gaa gtg gac taa gtgtcatgtt atccaagcag tgggttaact 2729
 Ser Gly Glu Met Glu Val Asp

835

aaagggccca ttcattccttt atgcccggta cacacaacat atgttcagtt gtctttaact 2789
 acttttgtca ttigtgtttt ggagtagttt tgaaaagtgt ctatattgag tacactattg 2849
 ctgtccattg ctgctgtgaa gccctagctg aatatagatg tacaaatca 2898

<210> 370

<211> 838

<212> PRT

<213> Mus musculus

<400> 370

Met Ser Val Val Gly Ile Asp Leu Gly Phe Leu Asn Cys Tyr Ile Ala

1

5

10

15

Val Ala Arg Ser Gly Gly Ile Glu Thr Ile Ala Asn Glu Tyr Ser Asp

20

25

30

Arg Cys Thr Pro Ala Cys Ile Ser Leu Gly Ser Arg Thr Arg Ala Ile

35

40

45

Gly Asn Ala Ala Lys Ser Gln Ile Val Thr Asn Val Arg Asn Thr Ile

50

55

60

His Gly Phe Lys Lys Leu His Gly Arg Ser Phe Asp Asp Pro Ile Val

65

70

75

80

Gln Thr Glu Arg Ile Arg Leu Pro Tyr Glu Leu Gln Lys Met Pro Asn

85

90

95

Gly Ser Thr Gly Val Lys Val Arg Tyr Leu Glu Glu Glu Arg Pro Phe

100	105	110	
Ala Ile Glu Gln Val Thr Gly Met Leu Leu Ala Lys Leu Lys Glu Thr			
115	120	125	
Ser Glu Asn Ala Leu Lys Lys Pro Val Ala Asp Cys Val Ile Ser Ile			
130	135	140	
Pro Ser Phe Phe Thr Asp Ala Glu Arg Arg Ser Val Met Ala Ala Ala			
145	150	155	160
Gln Val Ala Gly Leu Asn Cys Leu Arg Leu Met Asn Glu Thr Thr Ala			
165	170	175	
Val Ala Leu Ala Tyr Gly Ile Tyr Lys Gln Asp Leu Pro Ser Leu Asp			
180	185	190	
Glu Lys Pro Arg Asn Val Val Phe Ile Asp Met Gly His Ser Ala Tyr			
195	200	205	
Gln Val Ser Val Cys Ala Phe Asn Lys Gly Lys Leu Lys Val Leu Ala			
210	215	220	
Thr Thr Phe Asp Pro Tyr Leu Gly Gly Arg Asn Phe Asp Glu Ala Leu			
225	230	235	240
Val Asp Tyr Phe Cys Asp Glu Phe Lys Thr Lys Tyr Lys Ile Asn Val			
245	250	255	
Lys Glu Asn Ser Arg Ala Leu Leu Arg Leu Tyr Gln Glu Cys Glu Lys			
260	265	270	
Leu Lys Lys Leu Met Ser Ala Asn Ala Ser Asp Leu Pro Leu Asn Ile			
275	280	285	
Glu Cys Phe Met Asn Asp Leu Asp Val Ser Ser Lys Met Asn Arg Ala			
290	295	300	
Gln Phe Glu Gln Leu Cys Ala Ser Leu Leu Ala Arg Val Glu Pro Pro			
305	310	315	320
Leu Lys Ser Val Met Asp Gln Ala Asn Leu Gln Arg Glu Asp Ile Asn			
325	330	335	

Ser Ile Glu Ile Val Gly Gly Ala Thr Arg Ile Pro Ala Val Lys Glu
 340 345 350
 Gln Val Thr Arg Phe Phe Leu Lys Asp Ile Ser Thr Thr Leu Asn Ala
 355 360 365
 Asp Glu Ala Val Ala Arg Gly Cys Ala Leu Gln Cys Ala Ile Leu Ser
 370 375 380
 Pro Ala Phe Lys Val Arg Glu Phe Ser Ile Thr Asp Leu Val Pro Tyr
 385 390 395 400
 Ser Val Thr Leu Arg Trp Lys Thr Ser Phe Glu Glu Gly Thr Gly Glu
 405 410 415
 Cys Glu Val Phe Ser Lys Asn His Pro Ala Pro Phe Ser Lys Val Ile
 420 425 430
 Thr Phe His Lys Lys Glu Pro Phe Glu Leu Glu Ala Phe Tyr Thr Asn
 435 440 445
 Leu His Glu Val Pro Tyr Pro Asp Pro Arg Ile Gly Asn Phe Thr Ile
 450 455 460
 Gln Asn Val Phe Pro Gln Ser Asp Gly Asp Ser Ser Lys Val Lys Val
 465 470 475 480
 Lys Val Arg Ile Asn Ile His Gly Ile Phe Ser Val Ala Ser Ala Ser
 485 490 495
 Val Ile Glu Lys Gln Asn Leu Glu Gly Asp His Asn Asp Ala Ala Met
 500 505 510
 Glu Thr Glu Ala Pro Lys Ser Glu Gly Lys Glu Asp Val Asp Lys Met
 515 520 525
 Gln Val Asp Gln Glu Glu Gly Gly His Gln Lys Cys His Ala Glu His
 530 535 540
 Thr Pro Glu Glu Glu Ile Asp His Thr Gly Ala Lys Ala Lys Ala Pro
 545 550 555 560
 Pro Ser Asp Lys Gln Asp Arg Ile Asn Gln Thr Ile Lys Lys Gly Lys

	565		570		575
Ile Lys Ser	Ile Asp Leu Pro Ile Gln Ser Ser Leu Tyr Arg Gln Leu				
	580		585		590
Thr Gln Asp Leu Leu Asn Ser Tyr Ile Glu Asn Glu Gly Lys Met Ile					
	595		600		605
Met Gln Asp Lys Leu Glu Lys Glu Arg Asn Asp Ala Lys Asn Ala Val					
	610		615		620
Glu Glu Tyr Val Tyr Asp Phe Arg Asp Lys Leu Gly Thr Val Tyr Glu					
625		630		635	640
Lys Phe Ile Thr Pro Glu Asp Met Asn Lys Leu Ser Ala Met Leu Glu					
	645		650		655
Asp Thr Glu Asn Trp Leu Tyr Glu Glu Gly Glu Asp Gln Pro Lys Gln					
	660		665		670
Val Tyr Val Asp Arg Leu Gln Glu Leu Lys Lys Tyr Gly Gln Pro Ile					
	675		680		685
Gln Met Lys Tyr Val Glu His Glu Glu Arg Pro Lys Ala Leu Asn Asp					
	690		695		700
Leu Gly Lys Lys Ile Gln Leu Val Leu Lys Val Ile Glu Ala His Arg					
705		710		715	720
Asn Lys Asp Glu Arg Tyr Asp His Leu Asp Pro Ala Glu Met Glu Arg					
	725		730		735
Val Glu Lys Tyr Ile Ser Asp Ser Met Asn Trp Leu Asn Ser Lys Met					
	740		745		750
Asn Ala Gln Asn Lys Leu Ser Leu Thr Gln Asp Pro Val Val Lys Val					
	755		760		765
Ser Glu Ile Val Thr Lys Ser Met Glu Leu Asp Asn Phe Cys Asn Pro					
	770		775		780
Ile Val Tyr Lys Pro Lys Pro Lys Val Glu Ala Pro Glu Asp Lys Ala					
785		790		795	800

Lys Thr Gly Ser Glu His Asn Gly Pro Met Asp Gly Gln Ser Gly Ser
 805 810 815
 Glu Thr Ser Pro Asp Pro Pro Lys Gly Ser Ser Gln His Thr Asp Ser
 820 825 830
 Gly Glu Met Glu Val Asp
 835

<210> 371

<211> 494

<212> DNA

<213> Mus musculus

<400> 371

acccatgtac acaatggaaa atatitctgt gacititggcc gacctgttct ttgcaggaac 60
 agagaccacc agcacaactc tgacataatgg gctcctgatt ctcatggaat acccaggaat 120
 tgaagagaaa cttcatgaag gaatigacag ggttattggg ccgagccgtt gccctgcagt 180
 cccaggcagg atggatatgt cctacatgga cgctgtagtt catgagattc cgggattcag 240
 taagctcgtg tccttccaac ttggccgaag agcaaaccg gaaaccgtgg tccgagggtta 300
 tgtcctcccc aaggggacag gtiggaatcc cagtcctggag gccccttgat ttggcaaaca 360
 tgaggtttcg ggctcggga gagttgaacc ttgcgttttc tgagatggaa tggggagitt 420
 agttaccgga cgatttcaag gggtttctga aggaaaagcc tgtttttttg aggaagcctg 480
 ccccatggaa tggtt 494

<210> 372

<211> 184

<212> DNA

<213> Mus musculus

<400> 372

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 tcctcaacaa gaaggacctc ttgaagaaa aaataaaaaa gagccccctc acaatatgct 120
 acccagaata tgcaggctca aacacatatg aagaagcggc cgcgtatatt cagtgtcagt 180
 ttga 184

<210> 373

<211> 972

<212> DNA

<213> Mus musculus

<400> 373

aaagtgggtg gactcgcgtc gcgctgcgag actagaagga ggactccgga tccggctcgg 60
 cgctcgccct cgctcgccat ggagaagacc gagctgatcc agaaggccaa gctggcgctgc 120
 agcgagcgct acgacgacat ggccacctgc atgaaagccg tgacggagca gggcgccgag 180
 ctgtccaacg aggagcgcaa cctgctgtcg gtggcctaca aaaacgtggt agggggccgc 240
 agtccgctg gagggtcac tgcagcattg agcagaagac cgacacctct gacaagaagt 300
 tgcagctgat caaggactat agggagaaag tggagtcgga gctgaggtcc atctgcacca 360
 cggtcctgga attgttggat aagtatttaa tagccaatgc aactaatcga gagagtaagg 420
 tcttctatct gaaaatgaag ggagattatt tccggtatct tgctgaagta gcttgtggcg 480
 atgatcgaga cagacaatan gaaattccta aggagcgtac caaagaggcg ttgatatac 540
 nangaangag atgcacctan gcaccaatca gcctgggcnt gntcntaang tgcntgtatg 600
 tcgtatgaga cgttantacc gagacatgcg tgagantgct aaacggtttt gatagcgact 660
 cagagttgat ccatgangag atcgtgangc aagcgtacta tcagtcgtaa gaagicaata 720
 tgcactgcat anggagattg nctcaagggc ggaantacgc ctagcaacat ntccctagaca 780
 tttagctacn tctcatggnc gngngnnngg gggngngnt ttgggggagg ggcccgnnng 840
 tgatgtatit caggccntgt gctcctnggc tgtatatctg taagcttcat taggcgatga 900
 tateccctagg ttcataagag cgaaatacag ctgcttcgcg cgctcatgcg agcgggagcg 960
 cgggtgttat tc 972

<210> 374

<211> 1629

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (16).. (1149)

<400> 374

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gcggacggag gcgag atg gcg gcc acc gag ggg gtc ggg gaa tct gcg gca  51
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              1              5              10

ggc ggc gag ccg gga cag ccg gag cag ccg ccg ccc ccg cct ccg ccg  99
Gly Gly Glu Pro Gly Gln Pro Glu Gln Pro Pro Pro Pro Pro Pro Pro
      15              20              25

ccg cca gca cag cag ccg cag gaa gaa gag atg gcg gct gag gcc ggg  147
Pro Pro Ala Gln Gln Pro Gln Glu Glu Glu Met Ala Ala Glu Ala Gly
      30              35              40

gaa gcg gcg gcg tcc cct atg gac gac ggg ttt ctg agc ctg gac tcg  195
Glu Ala Ala Ala Ser Pro Met Asp Asp Gly Phe Leu Ser Leu Asp Ser
      45              50              55              60

ccc acc tat gtc ttg tac agg gac aga gca gaa tgg gct gat ata gac  243
Pro Thr Tyr Val Leu Tyr Arg Asp Arg Ala Glu Trp Ala Asp Ile Asp
              65              70              75

cca gtg ccc cag aat gac ggc cct aac cca gtg gtc cag atc atc tac  291
Pro Val Pro Gln Asn Asp Gly Pro Asn Pro Val Val Gln Ile Ile Tyr
              80              85              90

agt gaa aag ttt aga gat gtt tat gat tac ttc cga gct gtt ctg cag  339

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Ser Glu Lys Phe Arg Asp Val Tyr Asp Tyr Phe Arg Ala Val Leu Gln
 95 100 105
 cgc gat gag agg agc gaa cga gcc ttt aag ctc acc cga gac gct att 387
 Arg Asp Glu Arg Ser Glu Arg Ala Phe Lys Leu Thr Arg Asp Ala Ile
 110 115 120
 gag tta aac gcg gcc aac tac aca gtg tgg cat ttt cgg aga gtt ctc 435
 Glu Leu Asn Ala Ala Asn Tyr Thr Val Trp His Phe Arg Arg Val Leu
 125 130 135 140
 tta agg tcg ctt caa aag gat cta caa gag gaa atg aac tac atc act 483
 Leu Arg Ser Leu Gln Lys Asp Leu Gln Glu Glu Met Asn Tyr Ile Thr
 145 150 155
 gcg ata att gag gag cag ccc aaa aac tat caa gtt tgg cac cac agg 531
 Ala Ile Ile Glu Glu Gln Pro Lys Asn Tyr Gln Val Trp His His Arg
 160 165 170
 cga gta tta gtg gaa tgg ctg aaa gat cct tct caa gag ctt gag ttc 579
 Arg Val Leu Val Glu Trp Leu Lys Asp Pro Ser Gln Glu Leu Glu Phe
 175 180 185
 att gcc gac att ctt agt cag gat gcc aag aat tac cat gcc tgg cag 627
 Ile Ala Asp Ile Leu Ser Gln Asp Ala Lys Asn Tyr His Ala Trp Gln
 190 195 200
 cat cga cag tgg gtc att cag gag ttc cga ctt tgg gat aat gag ctg 675
 His Arg Gln Trp Val Ile Gln Glu Phe Arg Leu Trp Asp Asn Glu Leu
 205 210 215 220
 cag tat gta gac cag ctt ctc aaa gag gat gtg agg aat aac tct gtg 723
 Gln Tyr Val Asp Gln Leu Leu Lys Glu Asp Val Arg Asn Asn Ser Val
 225 230 235
 tgg aac caa aga cac ttc gtc att tct aac acc act ggc tac agt gac 771
 Trp Asn Gln Arg His Phe Val Ile Ser Asn Thr Thr Gly Tyr Ser Asp
 240 245 250

cgc gcg gtg tta gag cga gaa gtc cag tat act ctg gaa atg atc aag 819
 Arg Ala Val Leu Glu Arg Glu Val Gln Tyr Thr Leu Glu Met Ile Lys
 255 260 265
 tta gtg cca cat aat gag agc gca tgg aac tac ctg aaa ggg att ctg 867
 Leu Val Pro His Asn Glu Ser Ala Trp Asn Tyr Leu Lys Gly Ile Leu
 270 275 280
 cag gac cgt ggt ctt tct aga tac cct aat cta tta aat cag ttg ctt 915
 Gln Asp Arg Gly Leu Ser Arg Tyr Pro Asn Leu Leu Asn Gln Leu Leu
 285 290 295 300
 gat tta caa cca agc cac agt tct ccg tac ctg att gcc ttt ctt gtg 963
 Asp Leu Gln Pro Ser His Ser Ser Pro Tyr Leu Ile Ala Phe Leu Val
 305 310 315
 gat gtc tat gaa gac atg cta gaa aac cag tgt gac aac aag gag gac 1011
 Asp Val Tyr Glu Asp Met Leu Glu Asn Gln Cys Asp Asn Lys Glu Asp
 320 325 330
 att ctt aat aaa gca cta gag tta tgt gag atc cta gct aaa gaa aag 1059
 Ile Leu Asn Lys Ala Leu Glu Leu Cys Glu Ile Leu Ala Lys Glu Lys
 335 340 345
 gac act ata aga aag gaa tat tgg agg tat att gga cgg tcc ctt cag 1107
 Asp Thr Ile Arg Lys Glu Tyr Trp Arg Tyr Ile Gly Arg Ser Leu Gln
 350 355 360
 agt aaa cac tgc aga gaa agt gac ata ccg gcg agt gta tag 1149
 Ser Lys His Cys Arg Glu Ser Asp Ile Pro Ala Ser Val
 365 370 375
 cagcgagggc atccggaaga agtggacgat gctttctaag gcctcttatg caggagcgta 1209
 gagtggtttag agcgggtcatc tcttgccctgt gcgctaaagc tgtccagggtg ctgcttttaa 1269
 caagaactaa giatgactcc tgtgtgctga cgctgttcag acgagctcta agaatccatt 1329
 ttctaaagca aagtcatttg aggggagggt gaggaagtt tcccataaag gaactactgc 1389
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gtatgcaagg ctgtgcgctg ggagtgacga ttgatttgca gtaacctgaa tctcggigca 1509
 ttatgcggca actgcgcctg ttggtagag ctgctgtgcg cactcacagg atcttgctat 1569
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<210> 375

<211> 377

<212> PRT

<213> Mus musculus

<400> 375

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 Gln Pro Gln Glu Glu Glu Met Ala Ala Glu Ala Gly Glu Ala Ala Ala
 35 40 45
 Ser Pro Met Asp Asp Gly Phe Leu Ser Leu Asp Ser Pro Thr Tyr Val
 50 55 60
 Leu Tyr Arg Asp Arg Ala Glu Trp Ala Asp Ile Asp Pro Val Pro Gln
 65 70 75 80
 Asn Asp Gly Pro Asn Pro Val Val Gln Ile Ile Tyr Ser Glu Lys Phe
 85 90 95
 Arg Asp Val Tyr Asp Tyr Phe Arg Ala Val Leu Gln Arg Asp Glu Arg
 100 105 110
 Ser Glu Arg Ala Phe Lys Leu Thr Arg Asp Ala Ile Glu Leu Asn Ala
 115 120 125
 Ala Asn Tyr Thr Val Trp His Phe Arg Arg Val Leu Leu Arg Ser Leu
 130 135 140
 Gln Lys Asp Leu Gln Glu Glu Met Asn Tyr Ile Thr Ala Ile Ile Glu

145	150	155	160
Glu Gln Pro Lys Asn Tyr Gln Val Trp His His Arg Arg Val Leu Val			
	165	170	175
Glu Trp Leu Lys Asp Pro Ser Gln Glu Leu Glu Phe Ile Ala Asp Ile			
	180	185	190
Leu Ser Gln Asp Ala Lys Asn Tyr His Ala Trp Gln His Arg Gln Trp			
	195	200	205
Val Ile Gln Glu Phe Arg Leu Trp Asp Asn Glu Leu Gln Tyr Val Asp			
	210	215	220
Gln Leu Leu Lys Glu Asp Val Arg Asn Asn Ser Val Trp Asn Gln Arg			
225	230	235	240
His Phe Val Ile Ser Asn Thr Thr Gly Tyr Ser Asp Arg Ala Val Leu			
	245	250	255
Glu Arg Glu Val Gln Tyr Thr Leu Glu Met Ile Lys Leu Val Pro His			
	260	265	270
Asn Glu Ser Ala Trp Asn Tyr Leu Lys Gly Ile Leu Gln Asp Arg Gly			
	275	280	285
Leu Ser Arg Tyr Pro Asn Leu Leu Asn Gln Leu Leu Asp Leu Gln Pro			
	290	295	300
Ser His Ser Ser Pro Tyr Leu Ile Ala Phe Leu Val Asp Val Tyr Glu			
305	310	315	320
Asp Met Leu Glu Asn Gln Cys Asp Asn Lys Glu Asp Ile Leu Asn Lys			
	325	330	335
Ala Leu Glu Leu Cys Glu Ile Leu Ala Lys Glu Lys Asp Thr Ile Arg			
	340	345	350
Lys Glu Tyr Trp Arg Tyr Ile Gly Arg Ser Leu Gln Ser Lys His Cys			
	355	360	365
Arg Glu Ser Asp Ile Pro Ala Ser Val			
	370	375	

<210> 376

<211> 2537

<212> DNA

<213> *Mus musculus*

<220>

<221> CDS

<222> (36).. (2327)

<400> 376

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                                1             5

act tca gca tgc aaa cct tca tct gtc cgg ctt gca ccg tcg ttc tca      101
Thr Ser Ala Cys Lys Pro Ser Ser Val Arg Leu Ala Pro Ser Phe Ser
          10             15             20

ttc cat gct gct ggc ctt cag atg gct gca cag atg ccc cac tca cac      149
Phe His Ala Ala Gly Leu Gln Met Ala Ala Gln Met Pro His Ser His
          25             30             35

cag tac agt gac cgt cgc cag ccg agc ata agt gac cag cag gtg tct      197
Gln Tyr Ser Asp Arg Arg Gln Pro Ser Ile Ser Asp Gln Gln Val Ser
          40             45             50

gcc tta cca tat tct gac cag att cag caa cct cta act aac cag gtg      245
Ala Leu Pro Tyr Ser Asp Gln Ile Gln Gln Pro Leu Thr Asn Gln Val
          55             60             65             70

atg cct gac att gtc atg tta cag agg cgg atg ccc caa acc ttc cgt      293
Met Pro Asp Ile Val Met Leu Gln Arg Arg Met Pro Gln Thr Phe Arg
          75             80             85

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gat cca gca act gct cct ctg aga aaa ctc tct gtg gac ttg atc aaa 341
Asp Pro Ala Thr Ala Pro Leu Arg Lys Leu Ser Val Asp Leu Ile Lys
90 95 100
aca tac aag cat att aat gag gtt tac tat gca aaa aag aag cga aga 389
Thr Tyr Lys His Ile Asn Glu Val Tyr Tyr Ala Lys Lys Lys Arg Arg
105 110 115
cac caa cag ggc cag ggg gac gat tcc agt cat aag aag gag cgg aag 437
His Gln Gln Gly Gln Gly Asp Asp Ser Ser His Lys Lys Glu Arg Lys
120 125 130
gtt tac aat gat ggt tac gat gat gat aac tat gat tat att gta aaa 485
Val Tyr Asn Asp Gly Tyr Asp Asp Asp Asn Tyr Asp Tyr Ile Val Lys
135 140 145 150
aac ggg gaa aag tgg atg gat cgg tat gaa atc gac tcc tta ata ggc 533
Asn Gly Glu Lys Trp Met Asp Arg Tyr Glu Ile Asp Ser Leu Ile Gly
155 160 165
aaa ggt tca ttt gga cag gtt gtg aaa gct tat gac aga gtg gag caa 581
Lys Gly Ser Phe Gly Gln Val Val Lys Ala Tyr Asp Arg Val Glu Gln
170 175 180
gaa tgg gtc gcc att aaa atc atc aag aac aag aaa gcg ttt ctg aat 629
Glu Trp Val Ala Ile Lys Ile Ile Lys Asn Lys Lys Ala Phe Leu Asn
185 190 195
caa gcc cag ata gaa gtg cgg ctg ctt gag ctc atg aac aaa cac gac 677
Gln Ala Gln Ile Glu Val Arg Leu Leu Glu Leu Met Asn Lys His Asp
200 205 210
act gaa atg aag tac tac ata gtg cat ttg aaa cgc cac ttt atg ttt 725
Thr Glu Met Lys Tyr Tyr Ile Val His Leu Lys Arg His Phe Met Phe
215 220 225 230
cga aac cat ctc tgt tta gtg ttt gaa atg ctg tcc tat aat ctc tat 773
Arg Asn His Leu Cys Leu Val Phe Glu Met Leu Ser Tyr Asn Leu Tyr

235	240	245	
gat ttg ttg aga aac acc aac ttc cga ggg gtc tct ttg aac cta aca			821
Asp Leu Leu Arg Asn Thr Asn Phe Arg Gly Val Ser Leu Asn Leu Thr			
250	255	260	
cga aag ttt gcg caa cag atg tgc aca gca ttg ctt ttt ctt gcg act			869
Arg Lys Phe Ala Gln Gln Met Cys Thr Ala Leu Leu Phe Leu Ala Thr			
265	270	275	
cca gaa ctt agt atc att cac tgt gac tta aag cct gag aac atc ctt			917
Pro Glu Leu Ser Ile Ile His Cys Asp Leu Lys Pro Glu Asn Ile Leu			
280	285	290	
ctg tgt aac ccc aaa cgg agt gca atc aag att gtt gat ttt ggc agc			965
Leu Cys Asn Pro Lys Arg Ser Ala Ile Lys Ile Val Asp Phe Gly Ser			
295	300	305	310
tct tgt cag ttg ggg cag agg ata tac cag tat att cag agt cgc ttt			1013
Ser Cys Gln Leu Gly Gln Arg Ile Tyr Gln Tyr Ile Gln Ser Arg Phe			
315	320	325	
tat cgg tct cca gag gtg cta ctg gga atg cct tat gac ctt gct atc			1061
Tyr Arg Ser Pro Glu Val Leu Leu Gly Met Pro Tyr Asp Leu Ala Ile			
330	335	340	
gac atg tgg tcc ctt gga tgt atc ttg gtt gaa atg cac act gga gag			1109
Asp Met Trp Ser Leu Gly Cys Ile Leu Val Glu Met His Thr Gly Glu			
345	350	355	
cct ctg ttc agt ggt gcc aat gag gtc gat cag atg aat aaa ata gtg			1157
Pro Leu Phe Ser Gly Ala Asn Glu Val Asp Gln Met Asn Lys Ile Val			
360	365	370	
gaa gtc ttg ggc atc cca cct gct cat att ctt gac caa gca ccg aaa			1205
Glu Val Leu Gly Ile Pro Pro Ala His Ile Leu Asp Gln Ala Pro Lys			
375	380	385	390
gca aga aag ttc ttt gag aag ttg ccc gat ggc act tgg agc tta aag			1253

Ala Arg Lys Phe Phe Glu Lys Leu Pro Asp Gly Thr Trp Ser Leu Lys
 395 400 405
 aag acc aaa gat gga aaa cgg gag tac aaa cca cca gga acc cgt aaa 1301
 Lys Thr Lys Asp Gly Lys Arg Glu Tyr Lys Pro Pro Gly Thr Arg Lys
 410 415 420
 ctt cat aat att ctt gga gta gaa aca gga gga cct ggc ggg cgg cgt 1349
 Leu His Asn Ile Leu Gly Val Glu Thr Gly Gly Pro Gly Gly Arg Arg
 425 430 435
 gct ggg gaa tcg ggt cat act gta gct gac tac ttg aag ttc aaa gac 1397
 Ala Gly Glu Ser Gly His Thr Val Ala Asp Tyr Leu Lys Phe Lys Asp
 440 445 450
 ctc att tta agg atg ctt gat tat gac ccc aaa act cgg att caa cct 1445
 Leu Ile Leu Arg Met Leu Asp Tyr Asp Pro Lys Thr Arg Ile Gln Pro
 455 460 465 470
 tat tat gcc ctg cag cac agt ttt ttc aag aaa aca gct gat gaa ggt 1493
 Tyr Tyr Ala Leu Gln His Ser Phe Phe Lys Lys Thr Ala Asp Glu Gly
 475 480 485
 acc aac aca agt aac agt gtg tct acc agc cct gcg atg gag cag tct 1541
 Thr Asn Thr Ser Asn Ser Val Ser Thr Ser Pro Ala Met Glu Gln Ser
 490 495 500
 cag tct tca ggc acc acc tcc agc acc tcc tcc agc tca ggt gga tcc 1589
 Gln Ser Ser Gly Thr Thr Ser Ser Thr Ser Ser Ser Ser Gly Gly Ser
 505 510 515
 tcg gga acg agt aac agt ggg aga gcc agg tcg gat ccg acg cac cag 1637
 Ser Gly Thr Ser Asn Ser Gly Arg Ala Arg Ser Asp Pro Thr His Gln
 520 525 530
 cat cga cac agc ggt gga cac ttc gct gct gct gtc cag gcc atg gac 1685
 His Arg His Ser Gly Gly His Phe Ala Ala Ala Val Gln Ala Met Asp
 535 540 545 550

tgt gag aca cac agt ccc cag gtc cgc cag cag ttt ccg gct cct ctg	1733
Cys Glu Thr His Ser Pro Gln Val Arg Gln Gln Phe Pro Ala Pro Leu	
555 560 565	
gga tgg tca ggc act gaa gct cct aca caa gtc act gtt gaa act cat	1781
Gly Trp Ser Gly Thr Glu Ala Pro Thr Gln Val Thr Val Glu Thr His	
570 575 580	
cct gtt caa gag aca acc ttt cat gta gcc ccc cag cag aac gca ttg	1829
Pro Val Gln Glu Thr Thr Phe His Val Ala Pro Gln Gln Asn Ala Leu	
585 590 595	
cat cat cac cat gga aac agt tcc cat cac cac cac cac cat cac	1877
His His His His Gly Asn Ser Ser His His His His His His His His	
600 605 610	
cac cac cac cac cat gga cag caa gcc ttg ggt aac cgg acc agg cca	1925
His His His His His Gly Gln Gln Ala Leu Gly Asn Arg Thr Arg Pro	
615 620 625 630	
agg gtc tac aat tct cca aca aat agc tcc tct acc cag gat tct atg	1973
Arg Val Tyr Asn Ser Pro Thr Asn Ser Ser Ser Thr Gln Asp Ser Met	
635 640 645	
gag gtt ggc cac agt cac cac tcc atg aca tcc ctg tct tcc tca aca	2021
Glu Val Gly His Ser His His Ser Met Thr Ser Leu Ser Ser Ser Thr	
650 655 660	
act tct tcc tcg aca tct tcc tcc tct act ggt aat caa ggc aat cag	2069
Thr Ser Ser Ser Thr Ser Ser Ser Ser Thr Gly Asn Gln Gly Asn Gln	
665 670 675	
gcc tat cag aac cgc cca gtg gct gct aac acc ttg gac ttt gga cag	2117
Ala Tyr Gln Asn Arg Pro Val Ala Ala Asn Thr Leu Asp Phe Gly Gln	
680 685 690	
aat gga gct atg gac gtt aat ttg acc gtc tac tcc aat ccc cgc caa	2165
Asn Gly Ala Met Asp Val Asn Leu Thr Val Tyr Ser Asn Pro Arg Gln	

695 700 705 710
 gag act ggc ata gct gga cat cca aca tac caa ttt tct gct aat aca 2213
 Glu Thr Gly Ile Ala Gly His Pro Thr Tyr Gln Phe Ser Ala Asn Thr
 715 720 725
 ggt cct gca cat tac atg act gaa gga cat ctg gcg atg aga caa ggg 2261
 Gly Pro Ala His Tyr Met Thr Glu Gly His Leu Ala Met Arg Gln Gly
 730 735 740
 gct gat aga gaa gag tct ccc atg aca gga gtt tgt gtg caa cag agt 2309
 Ala Asp Arg Glu Glu Ser Pro Met Thr Gly Val Cys Val Gln Gln Ser
 745 750 755
 cct gta gct agc tcg tga ctacattgaa acttgagttt gtttcttgtg 2357
 Pro Val Ala Ser Ser
 760
 tgtttttata gaagtgggtgt ttttttccca aaaaacaaaa gtgcaaagct gcttgaatca 2417
 gaaggagatt aacacactga accgctacaa gagggcaaag ctgacttttt ttttaacttg 2477
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<210> 377

<211> 763

<212> PRT

<213> Mus musculus

<400> 377

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 Gln Met Pro His Ser His Gln Tyr Ser Asp Arg Arg Gln Pro Ser Ile
 35 40 45

Ser Asp Gln Gln Val Ser Ala Leu Pro Tyr Ser Asp Gln Ile Gln Gln
 50 55 60
 Pro Leu Thr Asn Gln Val Met Pro Asp Ile Val Met Leu Gln Arg Arg
 65 70 75 80
 Met Pro Gln Thr Phe Arg Asp Pro Ala Thr Ala Pro Leu Arg Lys Leu
 85 90 95
 Ser Val Asp Leu Ile Lys Thr Tyr Lys His Ile Asn Glu Val Tyr Tyr
 100 105 110
 Ala Lys Lys Lys Arg Arg His Gln Gln Gly Gln Gly Asp Asp Ser Ser
 115 120 125
 His Lys Lys Glu Arg Lys Val Tyr Asn Asp Gly Tyr Asp Asp Asp Asn
 130 135 140
 Tyr Asp Tyr Ile Val Lys Asn Gly Glu Lys Trp Met Asp Arg Tyr Glu
 145 150 155 160
 Ile Asp Ser Leu Ile Gly Lys Gly Ser Phe Gly Gln Val Val Lys Ala
 165 170 175
 Tyr Asp Arg Val Glu Gln Glu Trp Val Ala Ile Lys Ile Ile Lys Asn
 180 185 190
 Lys Lys Ala Phe Leu Asn Gln Ala Gln Ile Glu Val Arg Leu Leu Glu
 195 200 205
 Leu Met Asn Lys His Asp Thr Glu Met Lys Tyr Tyr Ile Val His Leu
 210 215 220
 Lys Arg His Phe Met Phe Arg Asn His Leu Cys Leu Val Phe Glu Met
 225 230 235 240
 Leu Ser Tyr Asn Leu Tyr Asp Leu Leu Arg Asn Thr Asn Phe Arg Gly
 245 250 255
 Val Ser Leu Asn Leu Thr Arg Lys Phe Ala Gln Gln Met Cys Thr Ala
 260 265 270
 Leu Leu Phe Leu Ala Thr Pro Glu Leu Ser Ile Ile His Cys Asp Leu

275 280 285
 Lys Pro Glu Asn Ile Leu Leu Cys Asn Pro Lys Arg Ser Ala Ile Lys
 290 295 300
 Ile Val Asp Phe Gly Ser Ser Cys Gln Leu Gly Gln Arg Ile Tyr Gln
 305 310 315 320
 Tyr Ile Gln Ser Arg Phe Tyr Arg Ser Pro Glu Val Leu Leu Gly Met
 325 330 335
 Pro Tyr Asp Leu Ala Ile Asp Met Trp Ser Leu Gly Cys Ile Leu Val
 340 345 350
 Glu Met His Thr Gly Glu Pro Leu Phe Ser Gly Ala Asn Glu Val Asp
 355 360 365
 Gln Met Asn Lys Ile Val Glu Val Leu Gly Ile Pro Pro Ala His Ile
 370 375 380
 Leu Asp Gln Ala Pro Lys Ala Arg Lys Phe Phe Glu Lys Leu Pro Asp
 385 390 395 400
 Gly Thr Trp Ser Leu Lys Lys Thr Lys Asp Gly Lys Arg Glu Tyr Lys
 405 410 415
 Pro Pro Gly Thr Arg Lys Leu His Asn Ile Leu Gly Val Glu Thr Gly
 420 425 430
 Gly Pro Gly Gly Arg Arg Ala Gly Glu Ser Gly His Thr Val Ala Asp
 435 440 445
 Tyr Leu Lys Phe Lys Asp Leu Ile Leu Arg Met Leu Asp Tyr Asp Pro
 450 455 460
 Lys Thr Arg Ile Gln Pro Tyr Tyr Ala Leu Gln His Ser Phe Phe Lys
 465 470 475 480
 Lys Thr Ala Asp Glu Gly Thr Asn Thr Ser Asn Ser Val Ser Thr Ser
 485 490 495
 Pro Ala Met Glu Gln Ser Gln Ser Ser Gly Thr Thr Ser Ser Thr Ser
 500 505 510

Ser Ser Ser Gly Gly Ser Ser Gly Thr Ser Asn Ser Gly Arg Ala Arg
 515 520 525
 Ser Asp Pro Thr His Gln His Arg His Ser Gly Gly His Phe Ala Ala
 530 535 540
 Ala Val Gln Ala Met Asp Cys Glu Thr His Ser Pro Gln Val Arg Gln
 545 550 555 560
 Gln Phe Pro Ala Pro Leu Gly Trp Ser Gly Thr Glu Ala Pro Thr Gln
 565 570 575
 Val Thr Val Glu Thr His Pro Val Gln Glu Thr Thr Phe His Val Ala
 580 585 590
 Pro Gln Gln Asn Ala Leu His His His His Gly Asn Ser Ser His His
 595 600 605
 His His His His His His His His His His His Gly Gln Gln Ala Leu
 610 615 620
 Gly Asn Arg Thr Arg Pro Arg Val Tyr Asn Ser Pro Thr Asn Ser Ser
 625 630 635 640
 Ser Thr Gln Asp Ser Met Glu Val Gly His Ser His His Ser Met Thr
 645 650 655
 Ser Leu Ser Ser Ser Thr Thr Ser Ser Ser Thr Ser Ser Ser Ser Thr
 660 665 670
 Gly Asn Gln Gly Asn Gln Ala Tyr Gln Asn Arg Pro Val Ala Ala Asn
 675 680 685
 Thr Leu Asp Phe Gly Gln Asn Gly Ala Met Asp Val Asn Leu Thr Val
 690 695 700
 Tyr Ser Asn Pro Arg Gln Glu Thr Gly Ile Ala Gly His Pro Thr Tyr
 705 710 715 720
 Gln Phe Ser Ala Asn Thr Gly Pro Ala His Tyr Met Thr Glu Gly His
 725 730 735
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<210> 378

<211> 2965

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (297).. (1916)

<400> 378

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 gggattagaa tcttgttgtc aggcttggtg gcaagcacct tccctgctg agccataatcg 180
 gaggccagc ctccatgtct tgaatctccc tgtctgcgct gatcccttc ctggcttcga 240
 agggtccttc ttgggggcct gtattgacat ctctctccct cctgagcaca ggtacc atg 299

Met

1

cgg ccg gtg cga cgc aac ttc tac gat cca tcg tcg gcg ccg ggc aag 347

Arg Pro Val Arg Arg Asn Phe Tyr Asp Pro Ser Ser Ala Pro Gly Lys

5

10

15

ggc atc gtg tgg gaa tgg gag aac gac ggc ggg gcg tgg acg gcc tac 395

Gly Ile Val Trp Glu Trp Glu Asn Asp Gly Gly Ala Trp Thr Ala Tyr

20

25

30

gac atg gac atc tgc atc acc atc cag aac gcg tac gag aag cag cac 443

Asp Met Asp Ile Cys Ile Thr Ile Gln Asn Ala Tyr Glu Lys Gln His

35	40	45	
ccg tgg ctc gac ctc tca tgc ctc ggc ttc tgc tac ctc atc tac ttc	491		
Pro Trp Leu Asp Leu Ser Ser Leu Gly Phe Cys Tyr Leu Ile Tyr Phe			
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aac agc atg tcc cag atg aac cgc cag acg cgc cgc cgc cgc cgc ctc	539		
Asn Ser Met Ser Gln Met Asn Arg Gln Thr Arg Arg Arg Arg Arg Leu			
70	75	80	
cgc cgt cgc ctg gac ctg gct tac ccg ctc act gtc ggc tcc att ccc	587		
Arg Arg Arg Leu Asp Leu Ala Tyr Pro Leu Thr Val Gly Ser Ile Pro			
85	90	95	
aag tgc caa tcc tgg ccc gtg gga gcc agc tgc ggt cag ccc tgc tcc	635		
Lys Ser Gln Ser Trp Pro Val Gly Ala Ser Ser Gly Gln Pro Cys Ser			
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tgt cag cag tgc ctg ctg gtc aac agc acg cgc gcc gcc tcc aac gcc	683		
Cys Gln Gln Cys Leu Leu Val Asn Ser Thr Arg Ala Ala Ser Asn Ala			
115	120	125	
atc ctg gcc tgc cag cgc cgc aag gct ccc att gcg cca gcc gcg cct	731		
Ile Leu Ala Ser Gln Arg Arg Lys Ala Pro Ile Ala Pro Ala Ala Pro			
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cca gcg ccc cct ccg ccc ccg ccg ccg ctg cca ccc gga gga cct ccg	779		
Pro Ala Pro Pro Pro Pro Pro Pro Pro Leu Pro Pro Gly Gly Pro Pro			
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ggt gcg ctc gtt gtg cgc ccc agc gcc act ttc gcc gga gct gcg ctc	827		
Gly Ala Leu Val Val Arg Pro Ser Ala Thr Phe Ala Gly Ala Ala Leu			
165	170	175	
tgg gcc gca cct gcc acc ggc ccc acg gag cct gcg ccg cct cca gga	875		
Trp Ala Ala Pro Ala Thr Gly Pro Thr Glu Pro Ala Pro Pro Pro Gly			
180	185	190	
ggt ccc cca agg agc cct agt gcc ccc aac gga gcg ccc aca ccg ggc	923		

Val Pro Pro Arg Ser Pro Ser Ala Pro Asn Gly Ala Pro Thr Pro Gly
 195 200 205
 caa aac aac ctc agt cga cca gga cca cag agg tcc acc agc gtc agc 971
 Gln Asn Asn Leu Ser Arg Pro Gly Pro Gln Arg Ser Thr Ser Val Ser
 210 215 220 225
 gca cgc gcc tct atc ccg cct ggg gtt ccg gcg ctc ccc gtg aag aac 1019
 Ala Arg Ala Ser Ile Pro Pro Gly Val Pro Ala Leu Pro Val Lys Asn
 230 235 240
 ttg aat ggc act ggc cct gtc cac cca gcc ttg gca ggg atg acc ggg 1067
 Leu Asn Gly Thr Gly Pro Val His Pro Ala Leu Ala Gly Met Thr Gly
 245 250 255
 atc ctg ctg tgt gca gcg ggg ctg ccg gtg tgc ctg aca cga gca ccc 1115
 Ile Leu Leu Cys Ala Ala Gly Leu Pro Val Cys Leu Thr Arg Ala Pro
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 aaa ccc atc ctg cac cca cca cca gta agc aaa agc gac gtg aag cct 1163
 Lys Pro Ile Leu His Pro Pro Pro Val Ser Lys Ser Asp Val Lys Pro
 275 280 285
 gtg cct gga gtg ccc ggc gtc tgc cgc aag acc aag aag aaa cac ctc 1211
 Val Pro Gly Val Pro Gly Val Cys Arg Lys Thr Lys Lys Lys His Leu
 290 295 300 305
 aag aaa agc aag aat cct gag gat gtg gtt cgg agg tac atg cag aag 1259
 Lys Lys Ser Lys Asn Pro Glu Asp Val Val Arg Arg Tyr Met Gln Lys
 310 315 320
 gtg aaa aac ccg cct gat gag gac tgt acc att tgc atg gag cgg ctg 1307
 Val Lys Asn Pro Pro Asp Glu Asp Cys Thr Ile Cys Met Glu Arg Leu
 325 330 335
 gtc aca gca tct ggc tat gag ggc gtg ctc cga aac aag agt gtg cgg 1355
 Val Thr Ala Ser Gly Tyr Glu Gly Val Leu Arg Asn Lys Ser Val Arg
 340 345 350

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ccc gag ctt gtg ggc cgc ctg ggc cgc tgc ggc cac atg tat cac ctg      1403
Pro Glu Leu Val Gly Arg Leu Gly Arg Cys Gly His Met Tyr His Leu
      355              360              365

ctc tgc ctg gtg gcc atg tac tcc aat ggc aac aag gat ggc agc ctg      1451
Leu Cys Leu Val Ala Met Tyr Ser Asn Gly Asn Lys Asp Gly Ser Leu
370              375              380              385

cag tgt cca acc tgc aaa gcc atc tac ggg gag aag aca ggg aca cag      1499
Gln Cys Pro Thr Cys Lys Ala Ile Tyr Gly Glu Lys Thr Gly Thr Gln
      390              395              400

cca cca ggg aag atg gag ttt cac ctc atc ccg cac tcg ctg cct ggt      1547
Pro Pro Gly Lys Met Glu Phe His Leu Ile Pro His Ser Leu Pro Gly
      405              410              415

ttt gca gac acc cag acg atc cgc atc gtc tat gac atc ccc acg ggc      1595
Phe Ala Asp Thr Gln Thr Ile Arg Ile Val Tyr Asp Ile Pro Thr Gly
      420              425              430

atc cag ggc cct gaa cat ccc aac cca ggc aag aag ttc aca gcc aga      1643
Ile Gln Gly Pro Glu His Pro Asn Pro Gly Lys Lys Phe Thr Ala Arg
      435              440              445

ggc ttc cct cgc cac tgc tac cta ccc aac aat gag aag ggc cga aag      1691
Gly Phe Pro Arg His Cys Tyr Leu Pro Asn Asn Glu Lys Gly Arg Lys
450              455              460              465

gtg ctg aga ttg ctc atc acc gcc tgg gaa cgc aga ctc atc ttc act      1739
Val Leu Arg Leu Leu Ile Thr Ala Trp Glu Arg Arg Leu Ile Phe Thr
      470              475              480

atc gga aca tcc aac acc acg ggc gag tcg gac acc gtg gtg tgg aac      1787
Ile Gly Thr Ser Asn Thr Thr Gly Glu Ser Asp Thr Val Val Trp Asn
      485              490              495

gag att cac cac aag acg gag ttt ggt tcc aac ctc act ggt cac ggc      1835
Glu Ile His His Lys Thr Glu Phe Gly Ser Asn Leu Thr Gly His Gly

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500	505	510	
tac ccc gac gcc agc tac cta gac aac gtg ctg gct gag ctc acc gcc			1883
Tyr Pro Asp Ala Ser Tyr Leu Asp Asn Val Leu Ala Glu Leu Thr Ala			
515	520	525	
cag ggg gtt tct gag gcc atg gcc aag gcc tga ggccctgagtt gcccgcccttc			1936
Gln Gly Val Ser Glu Ala Met Ala Lys Ala			
530	535	540	
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cttccttatg gaaaacgatg ggcctttgcc ctccacacca cacacaaacg cacacgtgtc			2176
ctgttgacag cagcactca cgcacgtaca ccacgtgctt ctccacttct cccagcttgg			2236
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gcaaagacat cgtccttgcc tctgtaccgg cttctccccc actaaaccgc tccggacatt			2656
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gctgatcgtc tcaggccaac cagaggcccc ttgcccaggc aactcaccag ctccgcctct			2836
gaggattggc tgcctgggatg gaagtcagcc aagctttaaa gggacgccag caattgctct			2896
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tccttaaaa			2965

<210> 379

<211> 539

<212> PRT

<213> *Mus musculus*

<400> 379

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 35 40 45
 His Pro Trp Leu Asp Leu Ser Ser Leu Gly Phe Cys Tyr Leu Ile Tyr
 50 55 60
 Phe Asn Ser Met Ser Gln Met Asn Arg Gln Thr Arg Arg Arg Arg Arg
 65 70 75 80
 Leu Arg Arg Arg Leu Asp Leu Ala Tyr Pro Leu Thr Val Gly Ser Ile
 85 90 95
 Pro Lys Ser Gln Ser Trp Pro Val Gly Ala Ser Ser Gly Gln Pro Cys
 100 105 110
 Ser Cys Gln Gln Cys Leu Leu Val Asn Ser Thr Arg Ala Ala Ser Asn
 115 120 125
 Ala Ile Leu Ala Ser Gln Arg Arg Lys Ala Pro Ile Ala Pro Ala Ala
 130 135 140
 Pro Pro Ala Pro Pro Pro Pro Pro Pro Pro Leu Pro Pro Gly Gly Pro
 145 150 155 160
 Pro Gly Ala Leu Val Val Arg Pro Ser Ala Thr Phe Ala Gly Ala Ala
 165 170 175
 Leu Trp Ala Ala Pro Ala Thr Gly Pro Thr Glu Pro Ala Pro Pro Pro
 180 185 190
 Gly Val Pro Pro Arg Ser Pro Ser Ala Pro Asn Gly Ala Pro Thr Pro
 195 200 205

Gly Gln Asn Asn Leu Ser Arg Pro Gly Pro Gln Arg Ser Thr Ser Val
 210 215 220
 Ser Ala Arg Ala Ser Ile Pro Pro Gly Val Pro Ala Leu Pro Val Lys
 225 230 235 240
 Asn Leu Asn Gly Thr Gly Pro Val His Pro Ala Leu Ala Gly Met Thr
 245 250 255
 Gly Ile Leu Leu Cys Ala Ala Gly Leu Pro Val Cys Leu Thr Arg Ala
 260 265 270
 Pro Lys Pro Ile Leu His Pro Pro Pro Val Ser Lys Ser Asp Val Lys
 275 280 285
 Pro Val Pro Gly Val Pro Gly Val Cys Arg Lys Thr Lys Lys Lys His
 290 295 300
 Leu Lys Lys Ser Lys Asn Pro Glu Asp Val Val Arg Arg Tyr Met Gln
 305 310 315 320
 Lys Val Lys Asn Pro Pro Asp Glu Asp Cys Thr Ile Cys Met Glu Arg
 325 330 335
 Leu Val Thr Ala Ser Gly Tyr Glu Gly Val Leu Arg Asn Lys Ser Val
 340 345 350
 Arg Pro Glu Leu Val Gly Arg Leu Gly Arg Cys Gly His Met Tyr His
 355 360 365
 Leu Leu Cys Leu Val Ala Met Tyr Ser Asn Gly Asn Lys Asp Gly Ser
 370 375 380
 Leu Gln Cys Pro Thr Cys Lys Ala Ile Tyr Gly Glu Lys Thr Gly Thr
 385 390 395 400
 Gln Pro Pro Gly Lys Met Glu Phe His Leu Ile Pro His Ser Leu Pro
 405 410 415
 Gly Phe Ala Asp Thr Gln Thr Ile Arg Ile Val Tyr Asp Ile Pro Thr
 420 425 430
 Gly Ile Gln Gly Pro Glu His Pro Asn Pro Gly Lys Lys Phe Thr Ala

435	440	445
Arg Gly Phe Pro Arg His Cys Tyr Leu Pro Asn Asn Glu Lys Gly Arg		
450	455	460
Lys Val Leu Arg Leu Leu Ile Thr Ala Trp Glu Arg Arg Leu Ile Phe		
465	470	475
Thr Ile Gly Thr Ser Asn Thr Thr Gly Glu Ser Asp Thr Val Val Trp		
	485	490
Asn Glu Ile His His Lys Thr Glu Phe Gly Ser Asn Leu Thr Gly His		495
	500	505
Gly Tyr Pro Asp Ala Ser Tyr Leu Asp Asn Val Leu Ala Glu Leu Thr		510
	515	520
Ala Gln Gly Val Ser Glu Ala Met Ala Lys Ala		525
	530	535

<210> 380

<211> 2000

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (34).. (1362)

<400> 380

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Met Ala Ser Phe Thr Val Lys

1

5

gcc tat ctt ctg ggc aag gag gag gcg acc cgc gag atc cgc cgc ttc 102

Ala Tyr Leu Leu Gly Lys Glu Glu Ala Thr Arg Glu Ile Arg Arg Phe

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Ser Phe Cys Phe Ser Pro Glu Pro Glu Ala Glu Ala Gln Ala Ala Ala			
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ggc ccg ggg ccc tgc gag agg ctg ctg agc cga gtg gct gtg ctg ttc	198		
Gly Pro Gly Pro Cys Glu Arg Leu Leu Ser Arg Val Ala Val Leu Phe			
40	45	50	55
ccc acg ctg agg cct ggc ggc ttc cag gcg cac tac cgc gat gag gat	246		
Pro Thr Leu Arg Pro Gly Gly Phe Gln Ala His Tyr Arg Asp Glu Asp			
60	65	70	
ggg gac ttg gtt gcc ttt tcc agt gat gag gag ctg aca atg gct atg	294		
Gly Asp Leu Val Ala Phe Ser Ser Asp Glu Glu Leu Thr Met Ala Met			
75	80	85	
tcc tat gtg aaa gat gac atc ttc cgc atc tac att aaa gag aag aag	342		
Ser Tyr Val Lys Asp Asp Ile Phe Arg Ile Tyr Ile Lys Glu Lys Lys			
90	95	100	
gag tgc cgg cgg gaa cat cgc cca cca tgt gct cag gag gca ccc cga	390		
Glu Cys Arg Arg Glu His Arg Pro Pro Cys Ala Gln Glu Ala Pro Arg			
105	110	115	
aac atg gtg cac ccc aat gtg atc tgt gat ggt tgc aac ggg cct gtg	438		
Asn Met Val His Pro Asn Val Ile Cys Asp Gly Cys Asn Gly Pro Val			
120	125	130	135
gtg gga act cgc tat aag tgc agt gtg tgc cca gac tac gac ctg tgc	486		
Val Gly Thr Arg Tyr Lys Cys Ser Val Cys Pro Asp Tyr Asp Leu Cys			
140	145	150	
agc gtg tgc gag ggg aag ggc ctg cac agg gaa cac agc aag ctc atc	534		
Ser Val Cys Glu Gly Lys Gly Leu His Arg Glu His Ser Lys Leu Ile			
155	160	165	
ttt ccc aac ccc ttt ggc cac ctc tct gat agc ttc tct cat agc cgc	582		

Phe	Pro	Asn	Pro	Phe	Gly	His	Leu	Ser	Asp	Ser	Phe	Ser	His	Ser	Arg	
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tgg	ctt	cgg	aag	ctg	aaa	cat	gga	cac	ttt	ggc	tgg	cct	ggc	tgg	gag	630
Trp	Leu	Arg	Lys	Leu	Lys	His	Gly	His	Phe	Gly	Trp	Pro	Gly	Trp	Glu	
	185						190					195				
atg	ggc	cca	ccg	ggg	aac	tgg	agc	cca	cgt	cct	cct	cgt	gca	ggg	gat	678
Met	Gly	Pro	Pro	Gly	Asn	Trp	Ser	Pro	Arg	Pro	Pro	Arg	Ala	Gly	Asp	
200					205					210				215		
ggc	cgc	cct	tgc	cct	aca	gct	gag	tca	gct	tct	gct	cca	cca	gaa	gat	726
Gly	Arg	Pro	Cys	Pro	Thr	Ala	Glu	Ser	Ala	Ser	Ala	Pro	Pro	Glu	Asp	
					220					225				230		
ccc	aat	gtc	aat	ttc	ctg	aag	aat	gtg	ggg	gag	agt	gtg	gca	gct	gcc	774
Pro	Asn	Val	Asn	Phe	Leu	Lys	Asn	Val	Gly	Glu	Ser	Val	Ala	Ala	Ala	
				235				240					245			
ctc	agc	cct	cta	ggc	att	gag	gtt	gac	att	gat	gtg	gaa	cat	gga	ggg	822
Leu	Ser	Pro	Leu	Gly	Ile	Glu	Val	Asp	Ile	Asp	Val	Glu	His	Gly	Gly	
		250					255					260				
aag	aga	agc	cgc	ctg	aca	ccc	act	acc	cca	gaa	agt	tcc	agc	aca	ggc	870
Lys	Arg	Ser	Arg	Leu	Thr	Pro	Thr	Thr	Pro	Glu	Ser	Ser	Ser	Thr	Gly	
	265					270					275					
aca	gaa	gac	aag	agt	aac	act	cag	cca	agc	agc	tgc	tct	tcg	gaa	gtc	918
Thr	Glu	Asp	Lys	Ser	Asn	Thr	Gln	Pro	Ser	Ser	Cys	Ser	Ser	Glu	Val	
280					285					290				295		
agc	aaa	cct	gac	ggg	gct	ggg	gag	ggc	cct	gct	cag	tct	ctg	aca	gag	966
Ser	Lys	Pro	Asp	Gly	Ala	Gly	Glu	Gly	Pro	Ala	Gln	Ser	Leu	Thr	Glu	
				300				305					310			
caa	atg	aaa	aag	ata	gcc	ttg	gag	tcg	gtg	gga	cag	cca	gag	gaa	cag	1014
Gln	Met	Lys	Lys	Ile	Ala	Leu	Glu	Ser	Val	Gly	Gln	Pro	Glu	Glu	Gln	
		315					320					325				

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 Met Glu Ser Gly Asn Cys Ser Gly Gly Asp Asp Asp Trp Thr His Leu
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 tct tca aaa gaa gtg gac cca tct aca ggt gaa ctc cag tct cta cag 1110
 Ser Ser Lys Glu Val Asp Pro Ser Thr Gly Glu Leu Gln Ser Leu Gln
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 Met Pro Glu Ser Glu Gly Pro Ser Ser Leu Asp Pro Ser Gln Glu Gly
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 ccc aca ggg ctg aag gaa gct gcc cta tac cca cat ctc cca cca gag 1206
 Pro Thr Gly Leu Lys Glu Ala Ala Leu Tyr Pro His Leu Pro Pro Glu
 380 385 390
 gct gat ccc cgg ctg att gag tcc ctc tcc cag atg ctg tcc atg ggt 1254
 Ala Asp Pro Arg Leu Ile Glu Ser Leu Ser Gln Met Leu Ser Met Gly
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 Phe Ser Asp Glu Gly Gly Trp Leu Thr Arg Leu Leu Gln Thr Lys Asn
 410 415 420
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 Tyr Asp Ile Gly Ala Ala Leu Asp Thr Ile Gln Tyr Ser Lys His Pro
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 Pro Pro Leu
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<210> 381

<211> 442

<212> PRT

<213> Mus musculus

<400> 381

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				20				25					30		
Ala	Glu	Ala	Gln	Ala	Ala	Ala	Gly	Pro	Gly	Pro	Cys	Glu	Arg	Leu	Leu
			35				40						45		
Ser	Arg	Val	Ala	Val	Leu	Phe	Pro	Thr	Leu	Arg	Pro	Gly	Gly	Phe	Gln
		50				55					60				
Ala	His	Tyr	Arg	Asp	Glu	Asp	Gly	Asp	Leu	Val	Ala	Phe	Ser	Ser	Asp
	65				70				75					80	
Glu	Glu	Leu	Thr	Met	Ala	Met	Ser	Tyr	Val	Lys	Asp	Asp	Ile	Phe	Arg
				85					90					95	
Ile	Tyr	Ile	Lys	Glu	Lys	Lys	Glu	Cys	Arg	Arg	Glu	His	Arg	Pro	Pro
			100					105					110		
Cys	Ala	Gln	Glu	Ala	Pro	Arg	Asn	Met	Val	His	Pro	Asn	Val	Ile	Cys
			115					120					125		
Asp	Gly	Cys	Asn	Gly	Pro	Val	Val	Gly	Thr	Arg	Tyr	Lys	Cys	Ser	Val

130	135	140
Cys Pro Asp Tyr Asp Leu Cys Ser Val Cys Glu Gly Lys Gly Leu His		
145	150	155
Arg Glu His Ser Lys Leu Ile Phe Pro Asn Pro Phe Gly His Leu Ser		160
	165	170
Asp Ser Phe Ser His Ser Arg Trp Leu Arg Lys Leu Lys His Gly His		175
	180	185
Phe Gly Trp Pro Gly Trp Glu Met Gly Pro Pro Gly Asn Trp Ser Pro		190
	195	200
Arg Pro Pro Arg Ala Gly Asp Gly Arg Pro Cys Pro Thr Ala Glu Ser		205
	210	215
Ala Ser Ala Pro Pro Glu Asp Pro Asn Val Asn Phe Leu Lys Asn Val		220
225	230	235
Gly Glu Ser Val Ala Ala Ala Leu Ser Pro Leu Gly Ile Glu Val Asp		240
	245	250
Ile Asp Val Glu His Gly Gly Lys Arg Ser Arg Leu Thr Pro Thr Thr		255
	260	265
Pro Glu Ser Ser Ser Thr Gly Thr Glu Asp Lys Ser Asn Thr Gln Pro		270
	275	280
Ser Ser Cys Ser Ser Glu Val Ser Lys Pro Asp Gly Ala Gly Glu Gly		285
	290	295
Pro Ala Gln Ser Leu Thr Glu Gln Met Lys Lys Ile Ala Leu Glu Ser		300
305	310	315
Val Gly Gln Pro Glu Glu Gln Met Glu Ser Gly Asn Cys Ser Gly Gly		320
	325	330
Asp Asp Asp Trp Thr His Leu Ser Ser Lys Glu Val Asp Pro Ser Thr		335
	340	345
Gly Glu Leu Gln Ser Leu Gln Met Pro Glu Ser Glu Gly Pro Ser Ser		350
	355	360
		365

Leu Asp Pro Ser Gln Glu Gly Pro Thr Gly Leu Lys Glu Ala Ala Leu
 370 375 380
 Tyr Pro His Leu Pro Pro Glu Ala Asp Pro Arg Leu Ile Glu Ser Leu
 385 390 395 400
 Ser Gln Met Leu Ser Met Gly Phe Ser Asp Glu Gly Gly Trp Leu Thr
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 Arg Leu Leu Gln Thr Lys Asn Tyr Asp Ile Gly Ala Ala Leu Asp Thr
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 Ile Gln Tyr Ser Lys His Pro Pro Pro Leu
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<210> 382

<211> 494

<212> DNA

<213> Mus musculus

<400> 382

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 gactcagcta cctgccttca gaatagttaa gggaccacct tttttttctc tttttttctc 420
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<210> 383

<211> 312

<212> DNA

<213> Mus musculus

<400> 383

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tgacctcaa aa                                     312
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<210> 384

<211> 2940

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (185).. (1651)

<400> 384

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cacaagagca ttgcacagct gatctgcca gcctttcagc tgtgctgtgg ttggagccct 180
gact atg gca gcc act ctt cta agg gca aag ccc aag gtg aca gtg tct 229
Met Ala Ala Thr Leu Leu Arg Ala Lys Pro Lys Val Thr Val Ser
      1             5             10             15
ttt gaa gat gtg tct gtg tac ttt aca aag aca gaa tgg agg ctt ctg 277
Phe Glu Asp Val Ser Val Tyr Phe Thr Lys Thr Glu Trp Arg Leu Leu
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gac ctc aaa cag agg acc ctc tac aag caa gtg atg ctg gag aac tac			325
Asp Leu Lys Gln Arg Thr Leu Tyr Lys Gln Val Met Leu Glu Asn Tyr			
35	40	45	
agc cat ctg gtg tca gta gga ttt gct ttc tcc aag cct aac ctg gta			373
Ser His Leu Val Ser Val Gly Phe Ala Phe Ser Lys Pro Asn Leu Val			
50	55	60	
tcc cag ctg gag cga ggg gag aag ccc tgg att aga gat gat gga atg			421
Ser Gln Leu Glu Arg Gly Glu Lys Pro Trp Ile Arg Asp Asp Gly Met			
65	70	75	
gag agt gca gca aga tcc tgt gct ggg aat agg ata aag acc aag act			469
Glu Ser Ala Ala Arg Ser Cys Ala Gly Asn Arg Ile Lys Thr Lys Thr			
80	85	90	95
ttg act tca aaa cca aaa ctt ttc gga aga ggt ctc ctc aga aat acc			517
Leu Thr Ser Lys Pro Lys Leu Phe Gly Arg Gly Leu Leu Arg Asn Thr			
100	105	110	
tca cga tcc tca ttg cag aga cgt cct cac gat ttc agg cca aat ccc			565
Ser Arg Ser Ser Leu Gln Arg Arg Pro His Asp Phe Arg Pro Asn Pro			
115	120	125	
att gta agg tac caa cac tcc aga atc gcg gat aag cga tat cta tgt			613
Ile Val Arg Tyr Gln His Ser Arg Ile Ala Asp Lys Arg Tyr Leu Cys			
130	135	140	
cag cag tgt gga aaa tcc ttc agc cgc agc ttc aat ctc atc aaa cac			661
Gln Gln Cys Gly Lys Ser Phe Ser Arg Ser Phe Asn Leu Ile Lys His			
145	150	155	
cgg att atc cac agc aga gag aaa cct tat gag tgc agc gag tgt ggg			709
Arg Ile Ile His Ser Arg Glu Lys Pro Tyr Glu Cys Ser Glu Cys Gly			
160	165	170	175
aag cag ttc cag cgc agc tta gcg ctg ctg gag cat cag cgc atc cac			757

Lys Gln Phe Gln Arg Ser Leu Ala Leu Leu Glu His Gln Arg Ile His
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 agc ggc gac aag ccc tat gaa tgt ggc gag tgt ggc aaa acc ttc acg 805
 Ser Gly Asp Lys Pro Tyr Glu Cys Gly Glu Cys Gly Lys Thr Phe Thr
 195 200 205
 cgc agc tcc aac ctc gtc aag cac cag gtc atc cac agc agt gag atg 853
 Arg Ser Ser Asn Leu Val Lys His Gln Val Ile His Ser Ser Glu Met
 210 215 220
 cca ttt gtg tgc cgc atg tgt ggt aaa gtg ttc agg cgc agc ttc gcg 901
 Pro Phe Val Cys Arg Met Cys Gly Lys Val Phe Arg Arg Ser Phe Ala
 225 230 235
 ctg ctt gag cac acg cgc atc cac agc ggc gag cgg ccc ttc gag tgc 949
 Leu Leu Glu His Thr Arg Ile His Ser Gly Glu Arg Pro Phe Glu Cys
 240 245 250 255
 acc gag tgc ggc aag gca ttc agc cga agc tcc aat ctc ata gag cat 997
 Thr Glu Cys Gly Lys Ala Phe Ser Arg Ser Ser Asn Leu Ile Glu His
 260 265 270
 cag cgc atc cac agt ggc cag aag ccc tac atc tgc aag gag tgc ggg 1045
 Gln Arg Ile His Ser Gly Gln Lys Pro Tyr Ile Cys Lys Glu Cys Gly
 275 280 285
 aag gcc ttc aag ggc gtc tcg cag gtc atc cac cac cag ctc atc cac 1093
 Lys Ala Phe Lys Gly Val Ser Gln Val Ile His His Gln Leu Ile His
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 Arg Gly Asp Lys Pro Phe Thr Cys His Glu Tyr Gly Lys Ala Phe Arg
 305 310 315
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 Gly Leu Ser Gly Leu Ser Gln His Gln Arg Val His Arg Gly Glu Lys
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ccc tat gag tgc agc gaa tgc ggc cgg gcc ttt ggt cgc cgg gcc aac 1237
Pro Tyr Glu Cys Ser Glu Cys Gly Arg Ala Phe Gly Arg Arg Ala Asn
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ctc ttc aag cac cag gtg gtg cat ggt ggg gtg cgg ctc cag cac cgc 1285
Leu Phe Lys His Gln Val Val His Gly Gly Val Arg Leu Gln His Arg
          355          360          365

act cga ggg aag gga ttc cag cgc aag ctc ctg gag cat ctg cgg gac 1333
Thr Arg Gly Lys Gly Phe Gln Arg Lys Leu Leu Glu His Leu Arg Asp
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ctc cat ggg cag cag ccc caa gag gct gga gaa ggt agc tcc gca gaa 1381
Leu His Gly Gln Gln Pro Gln Glu Ala Gly Glu Gly Ser Ser Ala Glu
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ccc cag ccc atc gac acc aat gag aag ccc caa gtt tgt gag cgc tgc 1429
Pro Gln Pro Ile Asp Thr Asn Glu Lys Pro Gln Val Cys Glu Arg Cys
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ggc cag gtc ttc gag aac aag ttg ctg ttg tgt cgc cac ttg cgc atc 1477
Gly Gln Val Phe Glu Asn Lys Leu Leu Leu Cys Arg His Leu Arg Ile
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cat gac gac gaa gat gac aag aaa cag aag cct gtt att tcg agc acc 1525
His Asp Asp Glu Asp Asp Lys Lys Gln Lys Pro Val Ile Ser Ser Thr
          435          440          445

tca gtt ttg gag gat aag tca ttg ctc agc caa cat ctg gaa gcc cag 1573
Ser Val Leu Glu Asp Lys Ser Leu Leu Ser Gln His Leu Glu Ala Gln
          450          455          460

ccc aca gag gaa agc gac agc gaa ggc agt gta gtt ttc gtg tat gct 1621
Pro Thr Glu Glu Ser Asp Ser Glu Gly Ser Val Val Phe Val Tyr Ala
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gag aag ccc cac ggt cca tcc tca cct tga ggccagaaac agggcagcag 1671
Glu Lys Pro His Gly Pro Ser Ser Pro

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480

485

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<211> 488

<212> PRT

<213> Mus musculus

<400> 385

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Leu Lys Gln Arg Thr Leu Tyr Lys Gln Val Met Leu Glu Asn Tyr Ser
          35           40           45
His Leu Val Ser Val Gly Phe Ala Phe Ser Lys Pro Asn Leu Val Ser
          50           55           60
Gln Leu Glu Arg Gly Glu Lys Pro Trp Ile Arg Asp Asp Gly Met Glu
          65           70           75           80
Ser Ala Ala Arg Ser Cys Ala Gly Asn Arg Ile Lys Thr Lys Thr Leu
          85           90           95
Thr Ser Lys Pro Lys Leu Phe Gly Arg Gly Leu Leu Arg Asn Thr Ser
          100          105          110
Arg Ser Ser Leu Gln Arg Arg Pro His Asp Phe Arg Pro Asn Pro Ile
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Val Arg Tyr Gln His Ser Arg Ile Ala Asp Lys Arg Tyr Leu Cys Gln
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Gln Cys Gly Lys Ser Phe Ser Arg Ser Phe Asn Leu Ile Lys His Arg
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Gln Phe Gln Arg Ser Leu Ala Leu Leu Glu His Gln Arg Ile His Ser
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Gly Asp Lys Pro Tyr Glu Cys Gly Glu Cys Gly Lys Thr Phe Thr Arg
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Ser Ser Asn Leu Val Lys His Gln Val Ile His Ser Ser Glu Met Pro
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Phe Val Cys Arg Met Cys Gly Lys Val Phe Arg Arg Ser Phe Ala Leu
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 260 265 270
 Arg Ile His Ser Gly Gln Lys Pro Tyr Ile Cys Lys Glu Cys Gly Lys
 275 280 285
 Ala Phe Lys Gly Val Ser Gln Val Ile His His Gln Leu Ile His Arg
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 Gly Asp Lys Pro Phe Thr Cys His Glu Tyr Gly Lys Ala Phe Arg Gly
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 Tyr Glu Cys Ser Glu Cys Gly Arg Ala Phe Gly Arg Arg Ala Asn Leu
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 Phe Lys His Gln Val Val His Gly Gly Val Arg Leu Gln His Arg Thr
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 Arg Gly Lys Gly Phe Gln Arg Lys Leu Leu Glu His Leu Arg Asp Leu
 370 375 380
 His Gly Gln Gln Pro Gln Glu Ala Gly Glu Gly Ser Ser Ala Glu Pro
 385 390 395 400
 Gln Pro Ile Asp Thr Asn Glu Lys Pro Gln Val Cys Glu Arg Cys Gly
 405 410 415
 Gln Val Phe Glu Asn Lys Leu Leu Leu Cys Arg His Leu Arg Ile His
 420 425 430
 Asp Asp Glu Asp Asp Lys Lys Gln Lys Pro Val Ile Ser Ser Thr Ser
 435 440 445
 Val Leu Glu Asp Lys Ser Leu Leu Ser Gln His Leu Glu Ala Gln Pro

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 Lys Pro His Gly Pro Ser Ser Pro
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<210> 386

<211> 4682

<212> DNA

<213> Mus musculus

<400> 386

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 aaatttcitt tttctgtcgt tttttctgtc gctgtaacag aaaacacagt agtatataac 4620
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 ac 4682

<210> 387

<211> 2684

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (346).. (2400)

<400> 387

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 aagcacggtt acagagaatg aaacaagggc agaagttaca gagcccgtag ggcatcttca 180
 aatagaagac tggagactag aaaaagaata ttgccaggag ttggcatcca ttggaagacc 240
 ttgagatcct ctgagctcag aatccagga ccgatgcac ttcccaccac ctggaagcac 300
 tgagccctcc agagctgcat ctgggaagac tcgcctgcct ccagc atg agt tct gaa 357

Met Ser Ser Glu

1

tgt gat gtt gga agc tct aaa gct gtg gtg aat ggc ttg gca tct ggc 405

Cys Asp Val Gly Ser Ser Lys Ala Val Val Asn Gly Leu Ala Ser Gly

5

10

15

20

aac cat gga cca gac aaa gac atg gac cct acc aaa atc tgc act ggc 453

Asn His Gly Pro Asp Lys Asp Met Asp Pro Thr Lys Ile Cys Thr Gly

25

30

35

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aaa gga aca gtg act ctt cgg gcc tcg tct tcc tac agg gga acc cca 501
Lys Gly Thr Val Thr Leu Arg Ala Ser Ser Ser Tyr Arg Gly Thr Pro
      40              45              50
agc agc agc cct gtg agc ccc cag gaa tct ccg aag cat gaa agc aag 549
Ser Ser Ser Pro Val Ser Pro Gln Glu Ser Pro Lys His Glu Ser Lys
      55              60              65
tca gat gaa tgg aaa ctt tct tcc agt gca gat acc aat ggc aac gcc 597
Ser Asp Glu Trp Lys Leu Ser Ser Ser Ala Asp Thr Asn Gly Asn Ala
      70              75              80
cag ccc tcc cca ctt gct gcc aag ggc tat aga agt gtg cat ccc agc 645
Gln Pro Ser Pro Leu Ala Ala Lys Gly Tyr Arg Ser Val His Pro Ser
      85              90              95              100
ctt tct gct gac aag ccc cag ggc agt cct tta cta aac gaa gtt tct 693
Leu Ser Ala Asp Lys Pro Gln Gly Ser Pro Leu Leu Asn Glu Val Ser
      105              110              115
tct tcc cac att gaa acc gat tcc caa gac ttc cct cca aca agc aga 741
Ser Ser His Ile Glu Thr Asp Ser Gln Asp Phe Pro Pro Thr Ser Arg
      120              125              130
cct tcg tct gcc tac ccc tcc acc acc atc gtc aac cct acc att gtg 789
Pro Ser Ser Ala Tyr Pro Ser Thr Thr Ile Val Asn Pro Thr Ile Val
      135              140              145
ctc ctg cag cac aat cga gag cag caa aag cga ctc agt agt ctt tca 837
Leu Leu Gln His Asn Arg Glu Gln Gln Lys Arg Leu Ser Ser Leu Ser
      150              155              160
gat cct gcc tca gag aga aga gcg ggt gag cag gac cca gta cca acc 885
Asp Pro Ala Ser Glu Arg Arg Ala Gly Glu Gln Asp Pro Val Pro Thr
      165              170              175              180
cca gca gaa ctc act tcg ccc ggc agg gct tct gag aga agg gca aag 933
Pro Ala Glu Leu Thr Ser Pro Gly Arg Ala Ser Glu Arg Arg Ala Lys

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185	190	195	
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Asp Ala Ser Arg Arg Val Val Arg Ser Ala Gln Asp Leu Ser Asp Val			
200	205	210	
tct aca gat gaa gtg ggc atc cca ctc cgg aat acc gag cga tgc aaa			1029
Ser Thr Asp Glu Val Gly Ile Pro Leu Arg Asn Thr Glu Arg Ser Lys			
215	220	225	
gac tgg tac aaa act atg ttt aaa cag atc cac aaa ctg aac aga gat			1077
Asp Trp Tyr Lys Thr Met Phe Lys Gln Ile His Lys Leu Asn Arg Asp			
230	235	240	
gat gat tct gat gtc cat tcc cct cga tac tcc ttc tct gat gac aca			1125
Asp Asp Ser Asp Val His Ser Pro Arg Tyr Ser Phe Ser Asp Asp Thr			
245	250	255	260
aag tct ccc ctt tct gtg cct cgc tca aaa agt gag atg aac tac atc			1173
Lys Ser Pro Leu Ser Val Pro Arg Ser Lys Ser Glu Met Asn Tyr Ile			
265	270	275	
gaa ggg gag aaa gtg gtt aag agg tcc gcc aca ctc ccc ctc cca gcc			1221
Glu Gly Glu Lys Val Val Lys Arg Ser Ala Thr Leu Pro Leu Pro Ala			
280	285	290	
cgc tct tcc tca ctc aag tcc agc ccg gaa aga aac gac tgg gag ccc			1269
Arg Ser Ser Ser Leu Lys Ser Ser Pro Glu Arg Asn Asp Trp Glu Pro			
295	300	305	
cta gat aag aaa gtg gat acg aga aaa tac cga gca gag ccc aaa agc			1317
Leu Asp Lys Lys Val Asp Thr Arg Lys Tyr Arg Ala Glu Pro Lys Ser			
310	315	320	
att tac gaa tat cag ccg ggc aag tct tgc gtc ctg acc aat gag aag			1365
Ile Tyr Glu Tyr Gln Pro Gly Lys Ser Ser Val Leu Thr Asn Glu Lys			
325	330	335	340
atg agc tca gca gtc agc ccg act cca gac att acg tca gag cct cct			1413

Met Ser Ser Ala Val Ser Pro Thr Pro Asp Ile Thr Ser Glu Pro Pro
 345 350 355
 gga tat atc tat tct tcc aac ttc cat gca gtc aag aga gaa tcg gac 1461
 Gly Tyr Ile Tyr Ser Ser Asn Phe His Ala Val Lys Arg Glu Ser Asp
 360 365 370
 ggg acc ccc ggg ggt ctc gct agc ttg gag aat gag agg cag atc tat 1509
 Gly Thr Pro Gly Gly Leu Ala Ser Leu Glu Asn Glu Arg Gln Ile Tyr
 375 380 385
 aag agt gtc ttg gaa ggt ggc gac atc cct ctt cag ggc ctc agt ggg 1557
 Lys Ser Val Leu Glu Gly Gly Asp Ile Pro Leu Gln Gly Leu Ser Gly
 390 395 400
 ctc aag cga cct tcc agc tca gct tcc act aaa gat tca gag tca cca 1605
 Leu Lys Arg Pro Ser Ser Ser Ala Ser Thr Lys Asp Ser Glu Ser Pro
 405 410 415 420
 aga cat ttt ata cca gct gat tac ttg gag tcc aca gaa gaa ttt att 1653
 Arg His Phe Ile Pro Ala Asp Tyr Leu Glu Ser Thr Glu Glu Phe Ile
 425 430 435
 cgg aga cgg cac gat gat aaa gag atg aga cct gct cga gcc aaa ttt 1701
 Arg Arg Arg His Asp Asp Lys Glu Met Arg Pro Ala Arg Ala Lys Phe
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 gac ttt aaa gcc cag acc ctg aag gag ctg cct ctg cag aag gga gac 1749
 Asp Phe Lys Ala Gln Thr Leu Lys Glu Leu Pro Leu Gln Lys Gly Asp
 455 460 465
 gtt gtt tac atc tac aga cag att gac cag aac tgg tat gaa ggt gaa 1797
 Val Val Tyr Ile Tyr Arg Gln Ile Asp Gln Asn Trp Tyr Glu Gly Glu
 470 475 480
 cac cat ggc cgg gtg gga atc ttc cca cgc acc tat atc gag ctt ctt 1845
 His His Gly Arg Val Gly Ile Phe Pro Arg Thr Tyr Ile Glu Leu Leu
 485 490 495 500

cct cca gct gag aag gct cag ccc aga aag ttg gca ccc gta caa gtt	1893
Pro Pro Ala Glu Lys Ala Gln Pro Arg Lys Leu Ala Pro Val Gln Val	
505 510 515	
ttg gaa tat gga gaa gcc att gca aag ttt aac ttt aat gga gat aca	1941
Leu Glu Tyr Gly Glu Ala Ile Ala Lys Phe Asn Phe Asn Gly Asp Thr	
520 525 530	
caa gta gaa atg tct ttc cga aag ggg gag agg atc acg ctg ctc cga	1989
Gln Val Glu Met Ser Phe Arg Lys Gly Glu Arg Ile Thr Leu Leu Arg	
535 540 545	
cag gtg gat gag aac tgg tat gaa ggg agg att cct ggg aca tct cgc	2037
Gln Val Asp Glu Asn Trp Tyr Glu Gly Arg Ile Pro Gly Thr Ser Arg	
550 555 560	
caa ggc att ttc cct atc acc tat gta gat gtg ctt aag agg cca ttg	2085
Gln Gly Ile Phe Pro Ile Thr Tyr Val Asp Val Leu Lys Arg Pro Leu	
565 570 575 580	
gtg aaa acc cct gtg gat tac atc gac ctg cct tat tct tct tcc cca	2133
Val Lys Thr Pro Val Asp Tyr Ile Asp Leu Pro Tyr Ser Ser Ser Pro	
585 590 595	
agt cgc agt gcc act gtg agc cca cag caa cct caa gcc cag cag cga	2181
Ser Arg Ser Ala Thr Val Ser Pro Gln Gln Pro Gln Ala Gln Gln Arg	
600 605 610	
aga gtc acc cca gac agg agt cag ccc tca ctg gat ttg tgt agc tac	2229
Arg Val Thr Pro Asp Arg Ser Gln Pro Ser Leu Asp Leu Cys Ser Tyr	
615 620 625	
caa gcg tta tat agt tat gtg cca cag aac gat gat gag ttg gaa ctc	2277
Gln Ala Leu Tyr Ser Tyr Val Pro Gln Asn Asp Asp Glu Leu Glu Leu	
630 635 640	
cga gat gga gat att gtt gat gtc atg gaa aaa tgt gac gat gga tgg	2325
Arg Asp Gly Asp Ile Val Asp Val Met Glu Lys Cys Asp Asp Gly Trp	

645 650 655 660
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 Phe Val Gly Thr Ser Arg Arg Thr Arg Gln Phe Gly Thr Phe Pro Gly
 665 670 675
 aac tat gta aaa cct tta tat cta taa gaagactaaa aagcacagag 2420
 Asn Tyr Val Lys Pro Leu Tyr Leu
 680 685
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<210> 388

<211> 684

<212> PRT

<213> Mus musculus

<400> 388

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 35 40 45
 Arg Gly Thr Pro Ser Ser Ser Pro Val Ser Pro Gln Glu Ser Pro Lys
 50 55 60
 His Glu Ser Lys Ser Asp Glu Trp Lys Leu Ser Ser Ser Ala Asp Thr
 65 70 75 80

Asn Gly Asn Ala Gln Pro Ser Pro Leu Ala Ala Lys Gly Tyr Arg Ser
 85 90 95
 Val His Pro Ser Leu Ser Ala Asp Lys Pro Gln Gly Ser Pro Leu Leu
 100 105 110
 Asn Glu Val Ser Ser Ser His Ile Glu Thr Asp Ser Gln Asp Phe Pro
 115 120 125
 Pro Thr Ser Arg Pro Ser Ser Ala Tyr Pro Ser Thr Thr Ile Val Asn
 130 135 140
 Pro Thr Ile Val Leu Leu Gln His Asn Arg Glu Gln Gln Lys Arg Leu
 145 150 155 160
 Ser Ser Leu Ser Asp Pro Ala Ser Glu Arg Arg Ala Gly Glu Gln Asp
 165 170 175
 Pro Val Pro Thr Pro Ala Glu Leu Thr Ser Pro Gly Arg Ala Ser Glu
 180 185 190
 Arg Arg Ala Lys Asp Ala Ser Arg Arg Val Val Arg Ser Ala Gln Asp
 195 200 205
 Leu Ser Asp Val Ser Thr Asp Glu Val Gly Ile Pro Leu Arg Asn Thr
 210 215 220
 Glu Arg Ser Lys Asp Trp Tyr Lys Thr Met Phe Lys Gln Ile His Lys
 225 230 235 240
 Leu Asn Arg Asp Asp Asp Ser Asp Val His Ser Pro Arg Tyr Ser Phe
 245 250 255
 Ser Asp Asp Thr Lys Ser Pro Leu Ser Val Pro Arg Ser Lys Ser Glu
 260 265 270
 Met Asn Tyr Ile Glu Gly Glu Lys Val Val Lys Arg Ser Ala Thr Leu
 275 280 285
 Pro Leu Pro Ala Arg Ser Ser Ser Leu Lys Ser Ser Pro Glu Arg Asn
 290 295 300
 Asp Trp Glu Pro Leu Asp Lys Lys Val Asp Thr Arg Lys Tyr Arg Ala

305	310	315	320
Glu Pro Lys Ser Ile Tyr Glu Tyr Gln Pro Gly Lys Ser Ser Val Leu			
325	330	335	
Thr Asn Glu Lys Met Ser Ser Ala Val Ser Pro Thr Pro Asp Ile Thr			
340	345	350	
Ser Glu Pro Pro Gly Tyr Ile Tyr Ser Ser Asn Phe His Ala Val Lys			
355	360	365	
Arg Glu Ser Asp Gly Thr Pro Gly Gly Leu Ala Ser Leu Glu Asn Glu			
370	375	380	
Arg Gln Ile Tyr Lys Ser Val Leu Glu Gly Gly Asp Ile Pro Leu Gln			
385	390	395	400
Gly Leu Ser Gly Leu Lys Arg Pro Ser Ser Ser Ala Ser Thr Lys Asp			
405	410	415	
Ser Glu Ser Pro Arg His Phe Ile Pro Ala Asp Tyr Leu Glu Ser Thr			
420	425	430	
Glu Glu Phe Ile Arg Arg Arg His Asp Asp Lys Glu Met Arg Pro Ala			
435	440	445	
Arg Ala Lys Phe Asp Phe Lys Ala Gln Thr Leu Lys Glu Leu Pro Leu			
450	455	460	
Gln Lys Gly Asp Val Val Tyr Ile Tyr Arg Gln Ile Asp Gln Asn Trp			
465	470	475	480
Tyr Glu Gly Glu His His Gly Arg Val Gly Ile Phe Pro Arg Thr Tyr			
485	490	495	
Ile Glu Leu Leu Pro Pro Ala Glu Lys Ala Gln Pro Arg Lys Leu Ala			
500	505	510	
Pro Val Gln Val Leu Glu Tyr Gly Glu Ala Ile Ala Lys Phe Asn Phe			
515	520	525	
Asn Gly Asp Thr Gln Val Glu Met Ser Phe Arg Lys Gly Glu Arg Ile			
530	535	540	

Thr Leu Leu Arg Gln Val Asp Glu Asn Trp Tyr Glu Gly Arg Ile Pro
 545 550 555 560
 Gly Thr Ser Arg Gln Gly Ile Phe Pro Ile Thr Tyr Val Asp Val Leu
 565 570 575
 Lys Arg Pro Leu Val Lys Thr Pro Val Asp Tyr Ile Asp Leu Pro Tyr
 580 585 590
 Ser Ser Ser Pro Ser Arg Ser Ala Thr Val Ser Pro Gln Gln Pro Gln
 595 600 605
 Ala Gln Gln Arg Arg Val Thr Pro Asp Arg Ser Gln Pro Ser Leu Asp
 610 615 620
 Leu Cys Ser Tyr Gln Ala Leu Tyr Ser Tyr Val Pro Gln Asn Asp Asp
 625 630 635 640
 Glu Leu Glu Leu Arg Asp Gly Asp Ile Val Asp Val Met Glu Lys Cys
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<210> 389

<211> 1551

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (64).. (1152)

<400> 389

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Met Glu Thr Asp Ala Pro Gln Pro Gly Leu Ala Ser Pro Asp Ser
1 5 10 15
ccg cac gac ccc tgc aag atg ttc atc gga gga ctc agt tgg cag acc 156
Pro His Asp Pro Cys Lys Met Phe Ile Gly Gly Leu Ser Trp Gln Thr
20 25 30
acg cag gaa ggg ctg cgc gaa tac ttc ggc cag ttc ggg gag gtg aaa 204
Thr Gln Glu Gly Leu Arg Glu Tyr Phe Gly Gln Phe Gly Glu Val Lys
35 40 45
gag tgt ctg gtg atg cgg gac ccc ctg acc aaa aga tcc agg ggt ttc 252
Glu Cys Leu Val Met Arg Asp Pro Leu Thr Lys Arg Ser Arg Gly Phe
50 55 60
ggc ttc gtc act ttc atg gac cag gcg ggg gtg gat aaa gtg ctg gcg 300
Gly Phe Val Thr Phe Met Asp Gln Ala Gly Val Asp Lys Val Leu Ala
65 70 75
caa tcg cgg cac gag ctc gac tcc aaa aca att gac ccc aag gtg gcc 348
Gln Ser Arg His Glu Leu Asp Ser Lys Thr Ile Asp Pro Lys Val Ala
80 85 90 95
ttt cct cga aga gca cag cct aag atg gtc act cgg acg aag aag atc 396
Phe Pro Arg Arg Ala Gln Pro Lys Met Val Thr Arg Thr Lys Lys Ile
100 105 110
ttc gtg ggg ggg ctg tct gtg aac acc acg gtg gaa gat gtg aaa cac 444
Phe Val Gly Gly Leu Ser Val Asn Thr Thr Val Glu Asp Val Lys His
115 120 125
tat ttc gag cag ttc gga aag gtg gat gat gcc atg ctg atg ttc gac 492
Tyr Phe Glu Gln Phe Gly Lys Val Asp Asp Ala Met Leu Met Phe Asp
130 135 140
aaa acc acc aac agg cac aga ggg ttt gga ttt gtc acg ttt gag agc 540

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Lys Thr Thr Asn Arg His Arg Gly Phe Gly Phe Val Thr Phe Glu Ser
 145 150 155
 gag gac atc gta gag aaa gtt tgt gag atc cac ttc cat gaa atc aac 588
 Glu Asp Ile Val Glu Lys Val Cys Glu Ile His Phe His Glu Ile Asn
 160 165 170 175
 aac aaa atg gtg gaa tgc aag aaa gcc cag cca aag gag gtg atg tcc 636
 Asn Lys Met Val Glu Cys Lys Lys Ala Gln Pro Lys Glu Val Met Ser
 180 185 190
 ccg aca ggc tca gcc cgg ggc agg tct cgg gtc atg ccc tac gga atg 684
 Pro Thr Gly Ser Ala Arg Gly Arg Ser Arg Val Met Pro Tyr Gly Met
 195 200 205
 gat gcc ttc atg ctg ggt att ggg atg ctg ggt tac cca ggg ttc caa 732
 Asp Ala Phe Met Leu Gly Ile Gly Met Leu Gly Tyr Pro Gly Phe Gln
 210 215 220
 gcc acg acc tac gcc agc cgg agt tac aca ggc ctt gcc cct ggt tac 780
 Ala Thr Thr Tyr Ala Ser Arg Ser Tyr Thr Gly Leu Ala Pro Gly Tyr
 225 230 235
 acc tac cag ttc ccc gaa ttc cgt gta gag cgg agc cct ctc ccg agc 828
 Thr Tyr Gln Phe Pro Glu Phe Arg Val Glu Arg Ser Pro Leu Pro Ser
 240 245 250 255
 gcc cca gtc ctc ccc gag ctc aca gct atc cct ctc acg gct tat ggg 876
 Ala Pro Val Leu Pro Glu Leu Thr Ala Ile Pro Leu Thr Ala Tyr Gly
 260 265 270
 ccc atg gcg gcg gca gcg gcg gcg gca gct gta gtt cga ggg aca ggc 924
 Pro Met Ala Ala Ala Ala Ala Ala Ala Val Val Arg Gly Thr Gly
 275 280 285
 tct cac ccc tgg acg atg gct ccc cct cca ggt tcc act ccc agc cgc 972
 Ser His Pro Trp Thr Met Ala Pro Pro Pro Gly Ser Thr Pro Ser Arg
 290 295 300

aca ggg ggc ttc cta ggg acc aca agc ccc ggc ccc atg gct gag ctc 1020
 Thr Gly Gly Phe Leu Gly Thr Thr Ser Pro Gly Pro Met Ala Glu Leu
 305 310 315
 tac ggg gca gcc aac cag gac tcc ggg gtc agc agt tac atc agc gcc 1068
 Tyr Gly Ala Ala Asn Gln Asp Ser Gly Val Ser Ser Tyr Ile Ser Ala
 320 325 330 335
 gcc agc ccc gcc ccc agc act ggt ttc ggc cac agt ctt ggg ggt ccc 1116
 Ala Ser Pro Ala Pro Ser Thr Gly Phe Gly His Ser Leu Gly Gly Pro
 340 345 350
 ttg att gcc aca gcc ttc acc aat ggg tac cac tga aacagggagg 1162
 Leu Ile Ala Thr Ala Phe Thr Asn Gly Tyr His
 355 360
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 ggattagcca gttgccctac cccacacca gatctgccct ctctccggt ctgccccatc 1462
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<210> 390

<211> 362

<212> PRT

<213> Mus musculus

<400> 390

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 His Asp Pro Cys Lys Met Phe Ile Gly Gly Leu Ser Trp Gln Thr Thr

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Cys Leu Val Met Arg Asp Pro Leu Thr Lys Arg Ser Arg Gly Phe Gly		
50	55	60
Phe Val Thr Phe Met Asp Gln Ala Gly Val Asp Lys Val Leu Ala Gln		
65	70	75
Ser Arg His Glu Leu Asp Ser Lys Thr Ile Asp Pro Lys Val Ala Phe		
85	90	95
Pro Arg Arg Ala Gln Pro Lys Met Val Thr Arg Thr Lys Lys Ile Phe		
100	105	110
Val Gly Gly Leu Ser Val Asn Thr Thr Val Glu Asp Val Lys His Tyr		
115	120	125
Phe Glu Gln Phe Gly Lys Val Asp Asp Ala Met Leu Met Phe Asp Lys		
130	135	140
Thr Thr Asn Arg His Arg Gly Phe Gly Phe Val Thr Phe Glu Ser Glu		
145	150	155
Asp Ile Val Glu Lys Val Cys Glu Ile His Phe His Glu Ile Asn Asn		
165	170	175
Lys Met Val Glu Cys Lys Lys Ala Gln Pro Lys Glu Val Met Ser Pro		
180	185	190
Thr Gly Ser Ala Arg Gly Arg Ser Arg Val Met Pro Tyr Gly Met Asp		
195	200	205
Ala Phe Met Leu Gly Ile Gly Met Leu Gly Tyr Pro Gly Phe Gln Ala		
210	215	220
Thr Thr Tyr Ala Ser Arg Ser Tyr Thr Gly Leu Ala Pro Gly Tyr Thr		
225	230	235
Tyr Gln Phe Pro Glu Phe Arg Val Glu Arg Ser Pro Leu Pro Ser Ala		
245	250	255

Pro Val Leu Pro Glu Leu Thr Ala Ile Pro Leu Thr Ala Tyr Gly Pro
 260 265 270
 Met Ala Ala Ala Ala Ala Ala Ala Val Val Arg Gly Thr Gly Ser
 275 280 285
 His Pro Trp Thr Met Ala Pro Pro Pro Gly Ser Thr Pro Ser Arg Thr
 290 295 300
 Gly Gly Phe Leu Gly Thr Thr Ser Pro Gly Pro Met Ala Glu Leu Tyr
 305 310 315 320
 Gly Ala Ala Asn Gln Asp Ser Gly Val Ser Ser Tyr Ile Ser Ala Ala
 325 330 335
 Ser Pro Ala Pro Ser Thr Gly Phe Gly His Ser Leu Gly Gly Pro Leu
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<210> 391

<211> 3999

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (199).. (1839)

<400> 391

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 ttacccact cctctcggcc aggtccggcc tccccgggg gtcacgcggc tgccccgggg 180
 acgatgaacg gaggataa atg gtg ccc aag gca gac agc ggt gcc ttc ctg 231

Met	Val	Pro	Lys	Ala	Asp	Ser	Gly	Ala	Phe	Leu	
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ctg	ctc	ttc	ctg	ctg	gtt	ctc	act	gtc	acc	gag	279
Leu	Leu	Phe	Leu	Leu	Val	Leu	Thr	Val	Thr	Glu	
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ctt	cgg	tgc	aac	cct	ggg	cag	ttt	gca	tgt	cac	327
Leu	Arg	Cys	Asn	Pro	Gly	Gln	Phe	Ala	Cys	His	
		30			35				40		
tgc	ata	ccc	ctc	ccc	tgg	cag	tgt	gat	ggc	tgg	375
Cys	Ile	Pro	Leu	Pro	Trp	Gln	Cys	Asp	Gly	Trp	
		45			50				55		
aag	agt	gat	gaa	gcc	gac	tgt	cca	gaa	gtg	act	423
Lys	Ser	Asp	Glu	Ala	Asp	Cys	Pro	Glu	Val	Thr	
		60			65				70		
tat	ggg	aag	gaa	act	gtg	gat	ctg	cgg	cag	ggg	471
Tyr	Gly	Lys	Glu	Thr	Val	Asp	Leu	Arg	Gln	Gly	
			80						85		
gac	ccc	aca	cac	ttc	cac	aca	gtg	aac	gtg	gct	519
Asp	Pro	Thr	His	Phe	His	Thr	Val	Asn	Val	Ala	
			95						100		
agc	agg	aaa	tgc	cca	agt	ggg	tgg	cac	cac	tat	567
Ser	Arg	Lys	Cys	Pro	Ser	Gly	Trp	His	His	Tyr	
			110						115		
tgc	tac	cgg	gtc	tac	ctc	agt	gga	gag	aac	tac	615
Cys	Tyr	Arg	Val	Tyr	Leu	Ser	Gly	Glu	Asn	Tyr	
			125						130		
acc	tgt	cag	cgt	gtg	aat	ggc	tca	ctt	gct	acc	663
Thr	Cys	Gln	Arg	Val	Asn	Gly	Ser	Leu	Ala	Thr	
									145		
									150		
										155	

gag ctg cgc ttc gtc cta gcc cag gaa tgg gac cag cca gag cgg agc	711
Glu Leu Arg Phe Val Leu Ala Gln Glu Trp Asp Gln Pro Glu Arg Ser	
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ttc ggc tgg aaa gac cag cgc aag ctc tgg gtt ggt tat cag tat gtc	759
Phe Gly Trp Lys Asp Gln Arg Lys Leu Trp Val Gly Tyr Gln Tyr Val	
175 180 185	
att act ggc cgg aac cat tcc tta gaa ggt cgc tgg gaa gtg gca ttc	807
Ile Thr Gly Arg Asn His Ser Leu Glu Gly Arg Trp Glu Val Ala Phe	
190 195 200	
aaa ggc tcc cca gaa gtg ttc ctg ccc cca gat ccc atc ttc gcc tct	855
Lys Gly Ser Pro Glu Val Phe Leu Pro Pro Asp Pro Ile Phe Ala Ser	
205 210 215	
gcc atg tct gag aat gac aac gtg ttc tgc gcc cag ctc cag tgt ttc	903
Ala Met Ser Glu Asn Asp Asn Val Phe Cys Ala Gln Leu Gln Cys Phe	
220 225 230 235	
cac ttt cct acc ctg agg cac cat gac ctc cac agc tgg cac gcc gag	951
His Phe Pro Thr Leu Arg His His Asp Leu His Ser Trp His Ala Glu	
240 245 250	
agc tgc tct gag aag tct tgc ttt ctg tgt aaa aga agt cag acg tgt	999
Ser Cys Ser Glu Lys Ser Ser Phe Leu Cys Lys Arg Ser Gln Thr Cys	
255 260 265	
gtt gat atc aaa gat aat gtg gtg gat gaa ggg ttc tac ttc act ccc	1047
Val Asp Ile Lys Asp Asn Val Val Asp Glu Gly Phe Tyr Phe Thr Pro	
270 275 280	
aag gga gat gac cca tgc ttg agc tgt acc tgc cat cga ggg gag cct	1095
Lys Gly Asp Asp Pro Cys Leu Ser Cys Thr Cys His Arg Gly Glu Pro	
285 290 295	
gag atg tgt gtt gct gcc ctg tgt gag cgg ccc cag ggg tgt cag cag	1143
Glu Met Cys Val Ala Ala Leu Cys Glu Arg Pro Gln Gly Cys Gln Gln	

300	305	310	315	
tac cgc aag gac cct aag gaa tgc tgc aaa ttc atg tgt ctg gac cca	1191			
Tyr Arg Lys Asp Pro Lys Glu Cys Cys Lys Phe Met Cys Leu Asp Pro				
320	325	330		
gat ggc agc agc ctg ttt gac tcc atg gct agt ggg atg cgc ctg gtc	1239			
Asp Gly Ser Ser Leu Phe Asp Ser Met Ala Ser Gly Met Arg Leu Val				
335	340	345		
gtc agc tgt atc tcc tcc ttc ctc atc ctc tcg ctg ctg ctt ttc atg	1287			
Val Ser Cys Ile Ser Ser Phe Leu Ile Leu Ser Leu Leu Leu Phe Met				
350	355	360		
gtc cac cgg cta cgc cag cgg cgc cgg gag cgc atc gag tcc ctg att	1335			
Val His Arg Leu Arg Gln Arg Arg Arg Glu Arg Ile Glu Ser Leu Ile				
365	370	375		
gga gca aac ttg cac cat ttc aac ctt ggc cgg agg atc cct ggc ttt	1383			
Gly Ala Asn Leu His His Phe Asn Leu Gly Arg Arg Ile Pro Gly Phe				
380	385	390	395	
gac tat ggt cca gat ggg ttt ggc aca ggc ctc acg cca cta cat ctt	1431			
Asp Tyr Gly Pro Asp Gly Phe Gly Thr Gly Leu Thr Pro Leu His Leu				
400	405	410		
tct gac gac ggg gaa ggt ggg act ttc cat ttc cac gac cct cca cct	1479			
Ser Asp Asp Gly Glu Gly Gly Thr Phe His Phe His Asp Pro Pro Pro				
415	420	425		
cct tat aca gct tac aag tac cca gac atg gac cag ccg gat gat cca	1527			
Pro Tyr Thr Ala Tyr Lys Tyr Pro Asp Met Asp Gln Pro Asp Asp Pro				
430	435	440		
cca cca ccc tat gag gcg tct atc aac cca gac agt gtg ttc tac gac	1575			
Pro Pro Pro Tyr Glu Ala Ser Ile Asn Pro Asp Ser Val Phe Tyr Asp				
445	450	455		
cct gca gat gac gat gcc ttt gag cct gtg gag gcc agc ctg cca gcc	1623			

Pro Ala Asp Asp Asp Ala Phe Glu Pro Val Glu Ala Ser Leu Pro Ala
 460 465 470 475
 cca aga gat ggt ggc att gaa ggt gca ttg ccc agg cac ttg gat cag 1671
 Pro Arg Asp Gly Gly Ile Glu Gly Ala Leu Pro Arg His Leu Asp Gln
 480 485 490
 ccg ctg ccc cct gca gag aca tcc tta gca gat ctg gaa gac tct aca 1719
 Pro Leu Pro Pro Ala Glu Thr Ser Leu Ala Asp Leu Glu Asp Ser Thr
 495 500 505
 gac agt agc agt gcc ctg ctg gtg cct cct gat ccc gcc cag agt gga 1767
 Asp Ser Ser Ser Ala Leu Leu Val Pro Pro Asp Pro Ala Gln Ser Gly
 510 515 520
 agc acc cca gct aca gaa gca ccg cca ggg ggt ggg cgc ctc ccc cgt 1815
 Ser Thr Pro Ala Thr Glu Ala Pro Pro Gly Gly Gly Arg Leu Pro Arg
 525 530 535
 gct tcc ctc aac act gtg gtt tag gtggctcagc ttgtggcccc ccgtgggcta 1869
 Ala Ser Leu Asn Thr Val Val
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<210> 392

<211> 546

<212> PRT

<213> Mus musculus

<400> 392

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 Gly Gln Phe Ala Cys His Gly Gly Thr Ile Gln Cys Ile Pro Leu Pro
 35 40 45
 Trp Gln Cys Asp Gly Trp Pro Thr Cys Glu Asp Lys Ser Asp Glu Ala
 50 55 60
 Asp Cys Pro Glu Val Thr Gly Glu Ala Arg Pro Tyr Gly Lys Glu Thr
 65 70 75 80
 Val Asp Leu Arg Gln Gly Arg Ala Arg Gly Gly Asp Pro Thr His Phe
 85 90 95
 His Thr Val Asn Val Ala Gln Pro Val Arg Phe Ser Arg Lys Cys Pro
 100 105 110
 Ser Gly Trp His His Tyr Glu Gly Thr Ala Ser Cys Tyr Arg Val Tyr
 115 120 125
 Leu Ser Gly Glu Asn Tyr Trp Asp Ala Ala Gln Thr Cys Gln Arg Val
 130 135 140
 Asn Gly Ser Leu Ala Thr Phe Ser Thr Asp Gln Glu Leu Arg Phe Val
 145 150 155 160
 Leu Ala Gln Glu Trp Asp Gln Pro Glu Arg Ser Phe Gly Trp Lys Asp
 165 170 175
 Gln Arg Lys Leu Trp Val Gly Tyr Gln Tyr Val Ile Thr Gly Arg Asn
 180 185 190
 His Ser Leu Glu Gly Arg Trp Glu Val Ala Phe Lys Gly Ser Pro Glu
 195 200 205
 Val Phe Leu Pro Pro Asp Pro Ile Phe Ala Ser Ala Met Ser Glu Asn

210	215	220
Asp Asn Val Phe Cys Ala Gln Leu Gln Cys Phe His Phe Pro Thr Leu		
225	230	235 240
Arg His His Asp Leu His Ser Trp His Ala Glu Ser Cys Ser Glu Lys		
245	250	255
Ser Ser Phe Leu Cys Lys Arg Ser Gln Thr Cys Val Asp Ile Lys Asp		
260	265	270
Asn Val Val Asp Glu Gly Phe Tyr Phe Thr Pro Lys Gly Asp Asp Pro		
275	280	285
Cys Leu Ser Cys Thr Cys His Arg Gly Glu Pro Glu Met Cys Val Ala		
290	295	300
Ala Leu Cys Glu Arg Pro Gln Gly Cys Gln Gln Tyr Arg Lys Asp Pro		
305	310	315 320
Lys Glu Cys Cys Lys Phe Met Cys Leu Asp Pro Asp Gly Ser Ser Leu		
325	330	335
Phe Asp Ser Met Ala Ser Gly Met Arg Leu Val Val Ser Cys Ile Ser		
340	345	350
Ser Phe Leu Ile Leu Ser Leu Leu Leu Phe Met Val His Arg Leu Arg		
355	360	365
Gln Arg Arg Arg Glu Arg Ile Glu Ser Leu Ile Gly Ala Asn Leu His		
370	375	380
His Phe Asn Leu Gly Arg Arg Ile Pro Gly Phe Asp Tyr Gly Pro Asp		
385	390	395 400
Gly Phe Gly Thr Gly Leu Thr Pro Leu His Leu Ser Asp Asp Gly Glu		
405	410	415
Gly Gly Thr Phe His Phe His Asp Pro Pro Pro Pro Tyr Thr Ala Tyr		
420	425	430
Lys Tyr Pro Asp Met Asp Gln Pro Asp Asp Pro Pro Pro Tyr Glu		
435	440	445

Ala Ser Ile Asn Pro Asp Ser Val Phe Tyr Asp Pro Ala Asp Asp Asp
 450 455 460
 Ala Phe Glu Pro Val Glu Ala Ser Leu Pro Ala Pro Arg Asp Gly Gly
 465 470 475 480
 Ile Glu Gly Ala Leu Pro Arg His Leu Asp Gln Pro Leu Pro Pro Ala
 485 490 495
 Glu Thr Ser Leu Ala Asp Leu Glu Asp Ser Thr Asp Ser Ser Ser Ala
 500 505 510
 Leu Leu Val Pro Pro Asp Pro Ala Gln Ser Gly Ser Thr Pro Ala Thr
 515 520 525
 Glu Ala Pro Pro Gly Gly Gly Arg Leu Pro Arg Ala Ser Leu Asn Thr
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 Val Val
 545

<210> 393

<211> 907

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (97).. (771)

<400> 393

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 Met Ser Ser Lys Ser Met

gtt ctg ggt tac tgg gat atc cgc ggg ctg gct cat gct atc cgc atg 162
 Val Leu Gly Tyr Trp Asp Ile Arg Gly Leu Ala His Ala Ile Arg Met
 10 15 20
 ctt ctg gag ttt act gat acc agc tat gag gag aaa cgg tac atc tgt 210
 Leu Leu Glu Phe Thr Asp Thr Ser Tyr Glu Glu Lys Arg Tyr Ile Cys
 25 30 35
 ggg gaa gct cct gac tat gat aga agc caa tgg ctg gac gtg aaa ttc 258
 Gly Glu Ala Pro Asp Tyr Asp Arg Ser Gln Trp Leu Asp Val Lys Phe
 40 45 50
 aag cta gat ctg gac ttt cct aac ctg ccc tac ctc atg gac ggg aag 306
 Lys Leu Asp Leu Asp Phe Pro Asn Leu Pro Tyr Leu Met Asp Gly Lys
 55 60 65 70
 aac aag atc acc cag agt aac gcc atc ctg aga tac atc gca cgc aag 354
 Asn Lys Ile Thr Gln Ser Asn Ala Ile Leu Arg Tyr Ile Ala Arg Lys
 75 80 85
 cac aac atg tgt ggt gac act gaa gaa gaa aag ata cga gta gac atc 402
 His Asn Met Cys Gly Asp Thr Glu Glu Glu Lys Ile Arg Val Asp Ile
 90 95 100
 atg gag aac cag atc atg gac ttc cgc atg cag ctg gtt cgc ctc tgc 450
 Met Glu Asn Gln Ile Met Asp Phe Arg Met Gln Leu Val Arg Leu Cys
 105 110 115
 tac aat tct aac cac gaa aac ctg aag cct cag tac ttg gaa cag cta 498
 Tyr Asn Ser Asn His Glu Asn Leu Lys Pro Gln Tyr Leu Glu Gln Leu
 120 125 130
 cct gca cag ctg aaa caa ttc tca ttg ttc ctg ggg aaa ttc aca tgg 546
 Pro Ala Gln Leu Lys Gln Phe Ser Leu Phe Leu Gly Lys Phe Thr Trp
 135 140 145 150
 ttt gca gga gaa aag ctg acc ttt gtg gat ttt ctc acc tat gat gtc 594
 Phe Ala Gly Glu Lys Leu Thr Phe Val Asp Phe Leu Thr Tyr Asp Val

155	160	165	
ttg gat cag aac cgt ata ttt gag ccc aag tgt ctg gat gag ttc cca	642		
Leu Asp Gln Asn Arg Ile Phe Glu Pro Lys Cys Leu Asp Glu Phe Pro			
170	175	180	
aac ctg aag gct ttc atg tgc cgt ttt gag gct ttg gag aag att gct	690		
Asn Leu Lys Ala Phe Met Cys Arg Phe Glu Ala Leu Glu Lys Ile Ala			
185	190	195	
gca ttc ctg cag tct gac cgc ttc ttc aag atg cca atc aat aac aag	738		
Ala Phe Leu Gln Ser Asp Arg Phe Phe Lys Met Pro Ile Asn Asn Lys			
200	205	210	
atg gcc aag tgg ggt aac aag tgc tta tgc tga gccagagctc gctgctgctg	791		
Met Ala Lys Trp Gly Asn Lys Cys Leu Cys			
215	220	225	
agccatcttg ccctgagggg cccacactct tagctcactg tcagtcttgt tccatcctgt	851		
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<210> 394

<211> 224

<212> PRT

<213> Mus musculus

<400> 394

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Ala His Ala Ile Arg Met Leu Leu Glu Phe Thr Asp Thr Ser Tyr Glu
20 25 30
Glu Lys Arg Tyr Ile Cys Gly Glu Ala Pro Asp Tyr Asp Arg Ser Gln
35 40 45
Trp Leu Asp Val Lys Phe Lys Leu Asp Leu Asp Phe Pro Asn Leu Pro

50	55	60
Tyr Leu Met Asp Gly Lys Asn Lys Ile Thr Gln Ser Asn Ala Ile Leu		
65	70	75
80		
Arg Tyr Ile Ala Arg Lys His Asn Met Cys Gly Asp Thr Glu Glu Glu		
85	90	95
Lys Ile Arg Val Asp Ile Met Glu Asn Gln Ile Met Asp Phe Arg Met		
100	105	110
Gln Leu Val Arg Leu Cys Tyr Asn Ser Asn His Glu Asn Leu Lys Pro		
115	120	125
Gln Tyr Leu Glu Gln Leu Pro Ala Gln Leu Lys Gln Phe Ser Leu Phe		
130	135	140
Leu Gly Lys Phe Thr Trp Phe Ala Gly Glu Lys Leu Thr Phe Val Asp		
145	150	155
160		
Phe Leu Thr Tyr Asp Val Leu Asp Gln Asn Arg Ile Phe Glu Pro Lys		
165	170	175
Cys Leu Asp Glu Phe Pro Asn Leu Lys Ala Phe Met Cys Arg Phe Glu		
180	185	190
Ala Leu Glu Lys Ile Ala Ala Phe Leu Gln Ser Asp Arg Phe Phe Lys		
195	200	205
Met Pro Ile Asn Asn Lys Met Ala Lys Trp Gly Asn Lys Cys Leu Cys		
210	215	220

<210> 395

<211> 4466

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (20).. (4003)

<400> 395

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Leu Ile Pro Ser Val Val Ile Thr Val Ile Phe Leu Phe Phe Trp Leu
              15              20              25
ttc atg aaa gaa aca tta tat gat gaa gtt ctt gca aaa caa aaa aga 148
Phe Met Lys Glu Thr Leu Tyr Asp Glu Val Leu Ala Lys Gln Lys Arg
              30              35              40
gag caa aag ttg att tct aca aaa aca gat aaa aag aag gca gaa aag 196
Glu Gln Lys Leu Ile Ser Thr Lys Thr Asp Lys Lys Lys Ala Glu Lys
              45              50              55
aag aag aat aaa aag aaa gaa atc cag aat ggg acc ctt cgt gaa tct 244
Lys Lys Asn Lys Lys Lys Glu Ile Gln Asn Gly Thr Leu Arg Glu Ser
              60              65              70              75
gat tct gag cac gtg cct cgg gac ttt aaa tta tcc gat gct tct ccc 292
Asp Ser Glu His Val Pro Arg Asp Phe Lys Leu Ser Asp Ala Ser Pro
              80              85              90
gcg gag gat gaa cag ttt gta cct gct cca ctg aat gtg gca gaa act 340
Ala Glu Asp Glu Gln Phe Val Pro Ala Pro Leu Asn Val Ala Glu Thr
              95              100              105
tcc agt agt gtt agg gaa aga cag aag aag gag aag aaa caa aaa cct 388
Ser Ser Ser Val Arg Glu Arg Gln Lys Lys Glu Lys Lys Gln Lys Pro
              110              115              120
tcc ctt gaa gag cag gtc atc aaa gaa agt gat gca tca aag atc cca 436
Ser Leu Glu Glu Gln Val Ile Lys Glu Ser Asp Ala Ser Lys Ile Pro

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125	130	135	
ggc aaa aaa gtg gaa cct gtc cta gtt acc aaa cag cca gcc cca ccc			484
Gly Lys Lys Val Glu Pro Val Leu Val Thr Lys Gln Pro Ala Pro Pro			
140	145	150	155
cca ccc ctc gaa gca gct gcc ttg aag aag aaa gca ggg cag aag aag			532
Pro Pro Leu Glu Ala Ala Ala Leu Lys Lys Lys Ala Gly Gln Lys Lys			
	160	165	170
tct aaa aat gga agc gaa gag caa gat aaa aag gtg gaa atg ctg atg			580
Ser Lys Asn Gly Ser Glu Glu Gln Asp Lys Lys Val Glu Met Leu Met			
	175	180	185
gca cct tca aaa gag cag gac gtg ttg ctt tcc cat caa gac act aag			628
Ala Pro Ser Lys Glu Gln Asp Val Leu Leu Ser His Gln Asp Thr Lys			
	190	195	200
caa gaa ggt gga cta gga aag aag aaa ggc ttg tca aag aag caa aag			676
Gln Glu Gly Gly Leu Gly Lys Lys Lys Gly Leu Ser Lys Lys Gln Lys			
	205	210	215
tca gaa aat gtt gca gtc ttg gta gac gag ccc ctt att cat gca act			724
Ser Glu Asn Val Ala Val Leu Val Asp Glu Pro Leu Ile His Ala Thr			
220	225	230	235
act tac atg cct ttg gat aat gct aac tca aat ctc atg atg gat aag			772
Thr Tyr Met Pro Leu Asp Asn Ala Asn Ser Asn Leu Met Met Asp Lys			
	240	245	250
aga gaa att att gat atg att aaa cct gat cat gtt gaa gga atc cag			820
Arg Glu Ile Ile Asp Met Ile Lys Pro Asp His Val Glu Gly Ile Gln			
	255	260	265
aaa tct gga aca aaa aag ctg aag att gaa act gac aaa gaa aat gct			868
Lys Ser Gly Thr Lys Lys Leu Lys Ile Glu Thr Asp Lys Glu Asn Ala			
	270	275	280
gaa gtg aaa ttt aaa gat ttc ctt ctg tcc ttg aag act atg atg ttt			916

Glu Val Lys Phe Lys Asp Phe Leu Leu Ser Leu Lys Thr Met Met Phe
 285 290 295
 tct gaa gat gaa gct ctt tgt gtt gta gac ctg ctg aag gaa aag tct 964
 Ser Glu Asp Glu Ala Leu Cys Val Val Asp Leu Leu Lys Glu Lys Ser
 300 305 310 315
 ggt gtg ata aaa gaa gct tta aag aag tcg aat aaa gga gaa ctg agt 1012
 Gly Val Ile Lys Glu Ala Leu Lys Lys Ser Asn Lys Gly Glu Leu Ser
 320 325 330
 ggt ctt ctg cat caa ctt cag gag aag gag agg ctg ctc tct gcc atg 1060
 Gly Leu Leu His Gln Leu Gln Glu Lys Glu Arg Leu Leu Ser Ala Met
 335 340 345
 aag gaa gat gct gct gcc tca aag gag cgc tgt aag agg ttg act cag 1108
 Lys Glu Asp Ala Ala Ala Ser Lys Glu Arg Cys Lys Arg Leu Thr Gln
 350 355 360
 gaa atg atg aca gag aaa gaa aga agc agt gtt gtt ata gca aga atg 1156
 Glu Met Met Thr Glu Lys Glu Arg Ser Ser Val Val Ile Ala Arg Met
 365 370 375
 aaa gat cgg att gga aca cta gaa aag gaa cac aat ata ttt caa aac 1204
 Lys Asp Arg Ile Gly Thr Leu Glu Lys Glu His Asn Ile Phe Gln Asn
 380 385 390 395
 aaa atg cat gcc agt tac caa gag act cag cag atg cag atg aag ttt 1252
 Lys Met His Ala Ser Tyr Gln Glu Thr Gln Gln Met Gln Met Lys Phe
 400 405 410
 cag caa gtt cag gaa caa atg gaa gca gag ata gct cat ttg aag cag 1300
 Gln Gln Val Gln Glu Gln Met Glu Ala Glu Ile Ala His Leu Lys Gln
 415 420 425
 gaa aat ggt atc ctg aga gat gct gtc agt aac act aca aac caa ctg 1348
 Glu Asn Gly Ile Leu Arg Asp Ala Val Ser Asn Thr Thr Asn Gln Leu
 430 435 440

gaa agc aag caa tcc gca gag cta aat aaa ctg cgc caa gac tgt ggg 1396
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 445 450 455
 agg ctg gtg agt gaa ctg aac gag aag aca gga aag ctg cag caa gag 1444
 Arg Leu Val Ser Glu Leu Asn Glu Lys Thr Gly Lys Leu Gln Gln Glu
 460 465 470 475
 gga gtc cag aag aag aac gcg gag caa gct gct acc cag ctc aag gtt 1492
 Gly Val Gln Lys Lys Asn Ala Glu Gln Ala Ala Thr Gln Leu Lys Val
 480 485 490
 caa ctg caa gaa gct gag agg cgc tgg gaa gaa gtt cag agc tac atc 1540
 Gln Leu Gln Glu Ala Glu Arg Arg Trp Glu Glu Val Gln Ser Tyr Ile
 495 500 505
 agg aag agg acg gcg gag cat gag gct gcc cag caa gat tta caa agt 1588
 Arg Lys Arg Thr Ala Glu His Glu Ala Ala Gln Gln Asp Leu Gln Ser
 510 515 520
 aaa ttt gtg gcc aaa gaa aat gaa gtc cag agt cta cat agt aag ctc 1636
 Lys Phe Val Ala Lys Glu Asn Glu Val Gln Ser Leu His Ser Lys Leu
 525 530 535
 aca gac acc ttg gta tca aaa cag caa ttg gag caa aga cta atg cag 1684
 Thr Asp Thr Leu Val Ser Lys Gln Gln Leu Glu Gln Arg Leu Met Gln
 540 545 550 555
 ttg atg gaa tcc gag caa aag agg gcg agc aaa gaa gag tct ctg cag 1732
 Leu Met Glu Ser Glu Gln Lys Arg Ala Ser Lys Glu Glu Ser Leu Gln
 560 565 570
 atc caa gtg cag gat att ttg gaa caa aac gag gct ttg aaa gct cag 1780
 Ile Gln Val Gln Asp Ile Leu Glu Gln Asn Glu Ala Leu Lys Ala Gln
 575 580 585
 att caa caa ttc cat tcc cag ata gca gct cag acc tcc gct tca gtt 1828
 Ile Gln Gln Phe His Ser Gln Ile Ala Ala Gln Thr Ser Ala Ser Val

590	595	600	
cta gca gaa gaa tta cat aaa gtg att gca gaa aag gac aag cag cta			1876
Leu Ala Glu Glu Leu His Lys Val Ile Ala Glu Lys Asp Lys Gln Leu			
605	610	615	
aag cag act gaa gat tca tta gcg aat gaa cag gat cac tta gca agc			1924
Lys Gln Thr Glu Asp Ser Leu Ala Asn Glu Gln Asp His Leu Ala Ser			
620	625	630	635
aag gag gag gag ctt aag gat gta cag aat atg aat ttc tta tta aaa			1972
Lys Glu Glu Glu Leu Lys Asp Val Gln Asn Met Asn Phe Leu Leu Lys			
640	645	650	
gct gaa gtg cag aaa tgg cag gcc ctg gct aat gag cag gct gct acc			2020
Ala Glu Val Gln Lys Trp Gln Ala Leu Ala Asn Glu Gln Ala Ala Thr			
655	660	665	
gca cat gag gtg gag aag atg cag aag agt att cac gta aag gaa gat			2068
Ala His Glu Val Glu Lys Met Gln Lys Ser Ile His Val Lys Glu Asp			
670	675	680	
gaa ata aga ctg ctt gag gag cag ctg cag cac gaa gtt gcc agc aaa			2116
Glu Ile Arg Leu Leu Glu Glu Gln Leu Gln His Glu Val Ala Ser Lys			
685	690	695	
atg gaa gaa ttg aag att ctg agt gag cag aat aaa gca tta cag tcg			2164
Met Glu Glu Leu Lys Ile Leu Ser Glu Gln Asn Lys Ala Leu Gln Ser			
700	705	710	715
gaa gtt cgg aag ctg cag acc gct gtt tct cag cag cct aat aaa gat			2212
Glu Val Arg Lys Leu Gln Thr Ala Val Ser Gln Gln Pro Asn Lys Asp			
720	725	730	
gtt gtg gaa caa atg gaa aaa tgc att caa gaa aaa gat gag aag tta			2260
Val Val Glu Gln Met Glu Lys Cys Ile Gln Glu Lys Asp Glu Lys Leu			
735	740	745	
agg act gtg gaa gaa tta ctg gag act gga ctc att cag gtg gcc acc			2308

Arg Thr Val Glu Glu Leu Leu Glu Thr Gly Leu Ile Gln Val Ala Thr
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 880 885 890
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 Gly Leu Thr Gly Arg Gly Thr Cys Ala Gln Val Cys Ser Thr Pro Gln
 895 900 905

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Ser Glu Leu Leu Lys Glu Val Gln Glu Glu Asn Lys Phe Leu Lys Cys	
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Gln Leu Ser His Gln Lys His Gln Gln Ala Ser Phe Pro Ser Gln Glu	
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Glu Leu Gln Thr Val Ile Ser Glu Lys Glu Lys Glu Ile Thr Asp Leu	
975 980 985	
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Cys Asn Glu Leu Glu Ser Leu Lys Asn Ala Val Glu His Gln Arg Lys	
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Gln Arg Met Ile Lys Gln Met Gln Ser Ser Phe Thr Ala Ser Glu Arg			
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Arg Ser Thr Tyr Val Met Glu Val Arg Glu Leu Lys Asp Leu Leu Thr			
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 His Lys Ala Gln Gln Ser Leu Asn Ser Ile His Ser Lys Ile Ser Leu
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<213> Mus musculus

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 Pro Arg Asp Phe Lys Leu Ser Asp Ala Ser Pro Ala Glu Asp Glu Gln
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 Phe Val Pro Ala Pro Leu Asn Val Ala Glu Thr Ser Ser Ser Val Arg
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 Glu Arg Gln Lys Lys Glu Lys Lys Gln Lys Pro Ser Leu Glu Glu Gln
 115 120 125
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 Leu Asn Glu Lys Thr Gly Lys Leu Gln Gln Glu Gly Val Gln Lys Lys
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 Ile Leu Glu Gln Asn Glu Ala Leu Lys Ala Gln Ile Gln Gln Phe His
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 Ser Leu Ala Asn Glu Gln Asp His Leu Ala Ser Lys Glu Glu Glu Leu

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Trp Gln Ala Leu Ala Asn Glu Gln Ala Ala Thr Ala His Glu Val Glu			
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Lys Met Gln Lys Ser Ile His Val Lys Glu Asp Glu Ile Arg Leu Leu			
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Glu Glu Gln Leu Gln His Glu Val Ala Ser Lys Met Glu Glu Leu Lys			
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Ile Leu Ser Glu Gln Asn Lys Ala Leu Gln Ser Glu Val Arg Lys Leu			
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Gln Thr Ala Val Ser Gln Gln Pro Asn Lys Asp Val Val Glu Gln Met			
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Asp Leu Lys Arg Val Ile His Glu Lys Asp Gly Gln Ile Lys Ser Val			
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Glu Glu Leu Leu Glu Val Glu Leu Leu Lys Val Ala Asn Lys Glu Lys			
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Thr Val Gln Ala Leu Lys Gln Glu Ile Glu Val Leu Lys Glu Glu Ile			
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Gly Asn Ala Gln Leu Glu Lys Ala His Gln Leu Ser Val Thr Ser Gln			
850	855	860	

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 Ser Met Lys Ala Ala Leu Glu Asp Arg Asp Arg Gly Leu Thr Gly Arg
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Gln Met Gln Ser Ser Phe Thr Ala Ser Glu Arg Glu Leu Glu Arg Leu		
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Arg Gln Glu Asn Lys Asp Met Glu Asn Leu Arg Arg Glu Arg Glu His		
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Leu Asp Asp Ser Tyr Ser Glu Ala Val Arg Gln Asn Glu Glu Leu Asn		
1220	1225	1230
Leu Leu Lys Thr Gln Leu Asn Glu Thr His Ser Lys Leu Gln Asn Glu		
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Gln Thr Glu Arg Lys Lys Val Ala Asp Asp Leu His Lys Ala Gln Gln		
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Thr Val Val Ile Glu Asn Ser Asp Ile Ser Pro Glu Met Glu Ser Pro		
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Leu Asp Thr Arg Tyr Leu Glu Gln Leu His Gln Leu Tyr Ser Asp Ser

10

15

20

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Phe Pro Met Glu Leu Arg Gln Phe Leu Ala Pro Trp Ile Glu Ser Gln

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His Asn Leu Leu Gly Glu Ile Asp Gln Gln Tyr Ser Arg Phe Leu Gln

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70

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Ala Cys Ile Gly Gly Pro Pro Asn Ile Cys Leu Asp Arg Leu Glu Asn
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 Met Gly Phe Ile Ser Lys Glu Arg Glu Arg Ala Ile Leu Ser Thr Lys
 590 595 600
 ccc ccg ggc acc ttc cta ctg cgc ttc agc gag agc agc aaa gaa gga 1997
 Pro Pro Gly Thr Phe Leu Leu Arg Phe Ser Glu Ser Ser Lys Glu Gly
 605 610 615
 ggg gtc act ttc act tgg gtg gaa aag gac atc agt ggc aag acc cag 2045
 Gly Val Thr Phe Thr Trp Val Glu Lys Asp Ile Ser Gly Lys Thr Gln
 620 625 630
 atc cag tct gta gag cca tac acc aag cag cag ctg aac aac atg tca 2093
 Ile Gln Ser Val Glu Pro Tyr Thr Lys Gln Gln Leu Asn Asn Met Ser
 635 640 645
 ttt gct gaa atc atc atg ggc tat aag atc atg gat gcg acc aac atc 2141
 Phe Ala Glu Ile Ile Met Gly Tyr Lys Ile Met Asp Ala Thr Asn Ile
 650 655 660 665
 ctg gtg tct cca ctt gtc tac ctc tac ccc gac att ccc aag gag gag 2189
 Leu Val Ser Pro Leu Val Tyr Leu Tyr Pro Asp Ile Pro Lys Glu Glu
 670 675 680
 gca ttt gga aag tac tgt agg ccc gag agc cag gag cac ccc gaa gcc 2237
 Ala Phe Gly Lys Tyr Cys Arg Pro Glu Ser Gln Glu His Pro Glu Ala
 685 690 695

gac cca ggt gct gcc ccg tac ctg aag acc aag ttc atc tgt gtg aca 2285
 Asp Pro Gly Ala Ala Pro Tyr Leu Lys Thr Lys Phe Ile Cys Val Thr
 700 705 710
 cca acg acc tgc agc aat acc att gac ctg ccg atg tcc ccc cgc act 2333
 Pro Thr Thr Cys Ser Asn Thr Ile Asp Leu Pro Met Ser Pro Arg Thr
 715 720 725
 tta gat tca ttg atg cag ttt gga aat aac ggt gaa ggt gct gag ccc 2381
 Leu Asp Ser Leu Met Gln Phe Gly Asn Asn Gly Glu Gly Ala Glu Pro
 730 735 740 745
 tca gca gga ggg cag ttt gag tgc ctc acg ttt gac atg gat ctg acc 2429
 Ser Ala Gly Gly Gln Phe Glu Ser Leu Thr Phe Asp Met Asp Leu Thr
 750 755 760
 tcg gag tgt gct acc tcc ccc atg tga ggagctgaaa ccagaagctg 2476
 Ser Glu Cys Ala Thr Ser Pro Met
 765 770
 cagagacgtg acitgagaca cctgccccgt gctccacccc taagcagccg aaccccatat 2536
 cgtctgaaac tcctaacttt giggttccag attttttttt ttttaatttc tacttctgct 2596
 atctttgggc aatctgggca ctttttaaaa tagagaaatg agtgagtgtg ggtgataaac 2656
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 aaggggaaca cctcctgtcc tgcccgctg ccttcctttt tcagcagctc ggggttggtt 2776
 gttagacaag tgcctcctgg tgcccatgca tcctgttgcc ccactctgtg agctgatacc 2836
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<210> 398

<211> 769

<212> PRT

<213> Mus musculus

<400> 398

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 Phe Leu Ala Pro Trp Ile Glu Ser Gln Asp Trp Ala Tyr Ala Ala Ser
 35 40 45
 Lys Glu Ser His Ala Thr Leu Val Phe His Asn Leu Leu Gly Glu Ile
 50 55 60
 Asp Gln Gln Tyr Ser Arg Phe Leu Gln Glu Ser Asn Val Leu Tyr Gln
 65 70 75 80
 His Asn Leu Arg Arg Ile Lys Gln Phe Leu Gln Ser Arg Tyr Leu Glu
 85 90 95
 Lys Pro Met Glu Ile Ala Arg Ile Val Ala Arg Cys Leu Trp Glu Glu
 100 105 110
 Ser Arg Leu Leu Gln Thr Ala Ala Thr Ala Ala Gln Gln Gly Gly Gln
 115 120 125
 Ala Asn His Pro Thr Ala Ala Val Val Thr Glu Lys Gln Gln Met Leu
 130 135 140
 Glu Gln His Leu Gln Asp Val Arg Lys Arg Val Gln Asp Leu Glu Gln
 145 150 155 160
 Lys Met Lys Val Val Glu Asn Leu Gln Asp Asp Phe Asp Phe Asn Tyr
 165 170 175
 Lys Thr Leu Lys Ser Gln Gly Asp Met Gln Asp Leu Asn Gly Asn Asn
 180 185 190
 Gln Ser Val Thr Arg Gln Lys Met Gln Gln Leu Glu Gln Met Leu Thr
 195 200 205
 Ala Leu Asp Gln Met Arg Arg Ser Ile Val Ser Glu Leu Ala Gly Leu
 210 215 220

Leu Ser Ala Met Glu Tyr Val Gln Lys Thr Leu Thr Asp Glu Glu Leu
 225 230 235 240
 Ala Asp Trp Lys Arg Arg Gln Gln Ile Ala Cys Ile Gly Gly Pro Pro
 245 250 255
 Asn Ile Cys Leu Asp Arg Leu Glu Asn Trp Ile Thr Ser Leu Ala Glu
 260 265 270
 Ser Gln Leu Gln Thr Arg Gln Gln Ile Lys Lys Leu Glu Glu Leu Gln
 275 280 285
 Gln Lys Val Ser Tyr Lys Gly Asp Pro Ile Val Gln His Arg Pro Met
 290 295 300
 Leu Glu Glu Arg Ile Val Glu Leu Phe Arg Asn Leu Met Lys Ser Ala
 305 310 315 320
 Phe Val Val Glu Arg Gln Pro Cys Met Pro Met His Pro Asp Arg Pro
 325 330 335
 Leu Val Ile Lys Thr Gly Val Gln Phe Thr Thr Lys Val Arg Leu Leu
 340 345 350
 Val Lys Phe Pro Glu Leu Asn Tyr Gln Leu Lys Ile Lys Val Cys Ile
 355 360 365
 Asp Lys Asp Ser Gly Asp Val Ala Ala Leu Arg Gly Ser Arg Lys Phe
 370 375 380
 Asn Ile Leu Gly Thr Asn Thr Lys Val Met Asn Met Glu Glu Ser Asn
 385 390 395 400
 Asn Gly Ser Leu Ser Ala Glu Phe Lys His Leu Thr Leu Arg Glu Gln
 405 410 415
 Arg Cys Gly Asn Gly Gly Arg Ala Asn Cys Asp Ala Ser Leu Ile Val
 420 425 430
 Thr Glu Glu Leu His Leu Ile Thr Phe Glu Thr Glu Val Tyr His Gln
 435 440 445
 Gly Leu Lys Ile Asp Leu Glu Thr His Ser Leu Pro Val Val Val Ile

450	455	460	
Ser Asn Ile Cys Gln Met Pro Asn Ala Trp Ala Ser Ile Leu Trp Tyr			
465	470	475	480
Asn Met Leu Thr Asn Asn Pro Lys Asn Val Asn Phe Phe Thr Lys Pro			
	485	490	495
Pro Ile Gly Thr Trp Asp Gln Val Ala Glu Val Leu Ser Trp Gln Phe			
	500	505	510
Ser Ser Thr Thr Lys Arg Gly Leu Ser Ile Glu Gln Leu Thr Thr Leu			
	515	520	525
Ala Glu Lys Leu Leu Gly Pro Gly Val Asn Tyr Ser Gly Cys Gln Ile			
	530	535	540
Thr Trp Ala Lys Phe Cys Lys Glu Asn Met Ala Gly Lys Gly Phe Ser			
545	550	555	560
Phe Trp Val Trp Leu Asp Asn Ile Ile Asp Leu Val Lys Lys Tyr Ile			
	565	570	575
Leu Ala Leu Trp Asn Glu Gly Tyr Ile Met Gly Phe Ile Ser Lys Glu			
	580	585	590
Arg Glu Arg Ala Ile Leu Ser Thr Lys Pro Pro Gly Thr Phe Leu Leu			
	595	600	605
Arg Phe Ser Glu Ser Ser Lys Glu Gly Gly Val Thr Phe Thr Trp Val			
	610	615	620
Glu Lys Asp Ile Ser Gly Lys Thr Gln Ile Gln Ser Val Glu Pro Tyr			
625	630	635	640
Thr Lys Gln Gln Leu Asn Asn Met Ser Phe Ala Glu Ile Ile Met Gly			
	645	650	655
Tyr Lys Ile Met Asp Ala Thr Asn Ile Leu Val Ser Pro Leu Val Tyr			
	660	665	670
Leu Tyr Pro Asp Ile Pro Lys Glu Glu Ala Phe Gly Lys Tyr Cys Arg			
	675	680	685

Pro Glu Ser Gln Glu His Pro Glu Ala Asp Pro Gly Ala Ala Pro Tyr
 690 695 700
 Leu Lys Thr Lys Phe Ile Cys Val Thr Pro Thr Thr Cys Ser Asn Thr
 705 710 715 720
 Ile Asp Leu Pro Met Ser Pro Arg Thr Leu Asp Ser Leu Met Gln Phe
 725 730 735
 Gly Asn Asn Gly Glu Gly Ala Glu Pro Ser Ala Gly Gly Gln Phe Glu
 740 745 750
 Ser Leu Thr Phe Asp Met Asp Leu Thr Ser Glu Cys Ala Thr Ser Pro
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Met

<210> 399

<211> 2338

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (269).. (1360)

<400> 399

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 gaccacggga aggttgaagg ataatcttct aataccagca ctttgaatga gatttgtttc 180
 tctgccacaa actgattttt tttttttaaa aaatttatth tcttggtgga ggagttgaaa 240
 caaagctaac ttttgtggct tcgcagct atg cag ctt gaa atc caa gta gca 292

Met Gln Leu Glu Ile Gln Val Ala

1

5

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ctc aat ttt att att tct tac ttg tac aat aag ctt ccc agg aga cgt 340
Leu Asn Phe Ile Ile Ser Tyr Leu Tyr Asn Lys Leu Pro Arg Arg Arg
      10              15              20
gtc aac att ttt ggt gaa gag ctt gaa aga ctt ctt aag aag aaa tat 388
Val Asn Ile Phe Gly Glu Glu Leu Glu Arg Leu Leu Lys Lys Lys Tyr
      25              30              35              40
gaa ggg cac tgg tat cct gaa aag cca tac aaa ggc tca ggg ttt aga 436
Glu Gly His Trp Tyr Pro Glu Lys Pro Tyr Lys Gly Ser Gly Phe Arg
              45              50              55
tgt ata cac gtg ggg gag aag gta gac ccc gtg atc gag cag gca tcc 484
Cys Ile His Val Gly Glu Lys Val Asp Pro Val Ile Glu Gln Ala Ser
              60              65              70
aaa gag agt ggt ttg gac att gac gat gtt cgt ggc aat ctg cca cag 532
Lys Glu Ser Gly Leu Asp Ile Asp Asp Val Arg Gly Asn Leu Pro Gln
              75              80              85
gat ttg agt gtc tgg atc gac ccg ttt gag gtt tcc tac cag atc ggc 580
Asp Leu Ser Val Trp Ile Asp Pro Phe Glu Val Ser Tyr Gln Ile Gly
              90              95              100
gaa aag gga cca gtg aag gtg ctg tac gtg gac gac agt agt gaa acc 628
Glu Lys Gly Pro Val Lys Val Leu Tyr Val Asp Asp Ser Ser Glu Thr
      105              110              115              120
gga tgt gag ctg gat aag gag atc aaa aac agc ttt aac ccg gag ccc 676
Gly Cys Glu Leu Asp Lys Glu Ile Lys Asn Ser Phe Asn Pro Glu Pro
              125              130              135
cag gtg ttc atg ccc ata agc gac ccg gcc tcc tcc gtg tcc agc tct 724
Gln Val Phe Met Pro Ile Ser Asp Pro Ala Ser Ser Val Ser Ser Ser
              140              145              150
ccc tca cct ccc ttc ggc cac tct gct gct gtc agc cct acc ttc atg 772
Pro Ser Pro Pro Phe Gly His Ser Ala Ala Val Ser Pro Thr Phe Met

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155	160	165	
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Pro Arg Ser Thr Gln Pro Leu Thr Phe Thr Thr Ala Thr Phe Ala Ala			
170	175	180	
acc aag ttc ggc tct acc aaa atg aag aat agt ggc cgt agc agc aag	868		
Thr Lys Phe Gly Ser Thr Lys Met Lys Asn Ser Gly Arg Ser Ser Lys			
185	190	195	200
gta gct cgc act tct ccg atc aac ctg ggc ctg act gta aat gtg aac	916		
Val Ala Arg Thr Ser Pro Ile Asn Leu Gly Leu Thr Val Asn Val Asn			
205	210	215	
cac ctc ctg aag cag aaa gcc atc tct tcc tca gtg cac tct ctg tat	964		
His Leu Leu Lys Gln Lys Ala Ile Ser Ser Ser Val His Ser Leu Tyr			
220	225	230	
ggg ctg ggc ctg ggc agc cag cag cag cca cag ccg cag cca cag cag	1012		
Gly Leu Gly Leu Gly Ser Gln Gln Gln Pro Gln Pro Gln Pro Gln Gln			
235	240	245	
cag cag cag cag cag ccg tca tca tcc cag ccg ccg cct cca cta ccg	1060		
Gln Gln Gln Gln Gln Pro Ser Ser Ser Gln Pro Pro Pro Pro Leu Pro			
250	255	260	
cag cag cag cag cag cag cca cag cag cag cag cag cag cag cag	1108		
Gln Gln Gln Gln Gln Gln Pro Gln Gln Gln Gln Gln Gln Gln Gln			
265	270	275	280
caa acc tct gct ctt tct ccc aat gcc aag gaa ttt att ttt cct aac	1156		
Gln Thr Ser Ala Leu Ser Pro Asn Ala Lys Glu Phe Ile Phe Pro Asn			
285	290	295	
atg cag ggt caa ggt agt agt acc aat gga atg ttc cca ggt gac agc	1204		
Met Gln Gly Gln Gly Ser Ser Thr Asn Gly Met Phe Pro Gly Asp Ser			
300	305	310	
ccc ctc aac ctc agt ccc ctc cag tac agc aat gcc ttt gat gtg ttt	1252		

Pro Leu Asn Leu Ser Pro Leu Gln Tyr Ser Asn Ala Phe Asp Val Phe
 315 320 325
 gcg gcc tac gga ggc ctc aac gag aag tct ttt gta gac ggc ttg aat 1300
 Ala Ala Tyr Gly Gly Leu Asn Glu Lys Ser Phe Val Asp Gly Leu Asn
 330 335 340
 ttt agc tta aat aac atg cag tat tct aac cag caa ttc cag cct gtt 1348
 Phe Ser Leu Asn Asn Met Gln Tyr Ser Asn Gln Gln Phe Gln Pro Val
 345 350 355 360
 atg gct aac taa aaaaacaaaa caaaggagaa catgtatcgt acaagttaaa 1400
 Met Ala Asn
 atgcatcggc ccaaggggga actttttttc tttttttttt tgcctccttg agattttttt 1460
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 aatttagtac aaagtttgta aaatatcaga ggatatatat atattgtttc tacgacatgg 1760
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 tgctaaaagt ctatgcicat gaagaagaaa gatacaactt actgagtcac aaaggaataa 2240
 tggaaggcag ggctctgctg ttgtcagac cgggtgttgc cagagctggg gtgggtgcata 2300
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<210> 400

<211> 363

<212> PRT

<213> Mus musculus

<400> 400

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      20             25             30
Glu Arg Leu Leu Lys Lys Lys Tyr Glu Gly His Trp Tyr Pro Glu Lys
      35             40             45
Pro Tyr Lys Gly Ser Gly Phe Arg Cys Ile His Val Gly Glu Lys Val
      50             55             60
Asp Pro Val Ile Glu Gln Ala Ser Lys Glu Ser Gly Leu Asp Ile Asp
      65             70             75             80
Asp Val Arg Gly Asn Leu Pro Gln Asp Leu Ser Val Trp Ile Asp Pro
      85             90             95
Phe Glu Val Ser Tyr Gln Ile Gly Glu Lys Gly Pro Val Lys Val Leu
      100            105            110
Tyr Val Asp Asp Ser Ser Glu Thr Gly Cys Glu Leu Asp Lys Glu Ile
      115            120            125
Lys Asn Ser Phe Asn Pro Glu Pro Gln Val Phe Met Pro Ile Ser Asp
      130            135            140
Pro Ala Ser Ser Val Ser Ser Ser Pro Ser Pro Pro Phe Gly His Ser
      145            150            155            160
Ala Ala Val Ser Pro Thr Phe Met Pro Arg Ser Thr Gln Pro Leu Thr
      165            170            175
Phe Thr Thr Ala Thr Phe Ala Ala Thr Lys Phe Gly Ser Thr Lys Met
      180            185            190
Lys Asn Ser Gly Arg Ser Ser Lys Val Ala Arg Thr Ser Pro Ile Asn

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195	200	205
Leu Gly Leu Thr Val Asn Val Asn His Leu Leu Lys Gln Lys Ala Ile		
210	215	220
Ser Ser Ser Val His Ser Leu Tyr Gly Leu Gly Leu Gly Ser Gln Gln		
225	230	235
Gln Pro Gln Pro Gln Pro Gln Gln Gln Gln Gln Gln Pro Ser Ser		
245	250	255
Ser Gln Pro Pro Pro Pro Leu Pro Gln Gln Gln Gln Gln Gln Pro Gln		
260	265	270
Gln Gln Gln Gln Gln Gln Gln Gln Gln Thr Ser Ala Leu Ser Pro Asn		
275	280	285
Ala Lys Glu Phe Ile Phe Pro Asn Met Gln Gly Gln Gly Ser Ser Thr		
290	295	300
Asn Gly Met Phe Pro Gly Asp Ser Pro Leu Asn Leu Ser Pro Leu Gln		
305	310	315
Tyr Ser Asn Ala Phe Asp Val Phe Ala Ala Tyr Gly Gly Leu Asn Glu		
325	330	335
Lys Ser Phe Val Asp Gly Leu Asn Phe Ser Leu Asn Asn Met Gln Tyr		
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Ser Asn Gln Gln Phe Gln Pro Val Met Ala Asn		
355	360	

<210> 401

<211> 273

<212> DNA

<213> Mus musculus

<400> 401

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 gcgggcatgc catcaccgag gtcctcaagg aggagatggg catcgggtggg gtcctcggcc 180
 tcctciggtt ccagagaagg ttgcccgaagt attcctgcca gttcattgag atgtgtctga 240
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<210> 402

<211> 3296

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (112).. (1710)

<400> 402

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Met Lys

1

ctt gct gac agc gta atg gca ggg aaa gct tcc gac ggc tcc atc aaa 165
 Leu Ala Asp Ser Val Met Ala Gly Lys Ala Ser Asp Gly Ser Ile Lys

5

10

15

tgg cag ctt tgc tac gac atc tgc gcc aga act tgg tgg atg gat gag 213
 Trp Gln Leu Cys Tyr Asp Ile Ser Ala Arg Thr Trp Trp Met Asp Glu

20

25

30

ttt cat cct ttc att gaa gca ctt ctg ccc cat gtc cgc gcc ttc gcc 261
 Phe His Pro Phe Ile Glu Ala Leu Leu Pro His Val Arg Ala Phe Ala

35

40

45

50

tac aca tgg ttc aac ctg cag gcc cga aag cgg aaa tac ttc aaa aaa 309

Tyr Thr Trp Phe Asn Leu Gln Ala Arg Lys Arg Lys Tyr Phe Lys Lys
 55 60 65
 cat gag aag cgc atg tcg aaa gaa gag gag agg gcc gtg aag gat gaa 357
 His Glu Lys Arg Met Ser Lys Glu Glu Glu Arg Ala Val Lys Asp Glu
 70 75 80
 ctg cta agc gag aag ccc gag gtc aag cag aag tgg gct tcc cga ctt 405
 Leu Leu Ser Glu Lys Pro Glu Val Lys Gln Lys Trp Ala Ser Arg Leu
 85 90 95
 ctg gcc aag tta cgg aaa gat atc cga ccc gag tac cga gag gat ttt 453
 Leu Ala Lys Leu Arg Lys Asp Ile Arg Pro Glu Tyr Arg Glu Asp Phe
 100 105 110
 gtt ctt aca gtt aca ggg aaa aaa cct cca tgc tgt gtt ctt tcc aac 501
 Val Leu Thr Val Thr Gly Lys Lys Pro Pro Cys Cys Val Leu Ser Asn
 115 120 125 130
 cct gat cag aaa ggc aag atg cgg aga att gac tgc ctc cgc cag gca 549
 Pro Asp Gln Lys Gly Lys Met Arg Arg Ile Asp Cys Leu Arg Gln Ala
 135 140 145
 gat aaa gta tgg agg ttg gac ctc gtc atg gtg atc ttg ttc aaa ggt 597
 Asp Lys Val Trp Arg Leu Asp Leu Val Met Val Ile Leu Phe Lys Gly
 150 155 160
 att ccg ctc gaa agt act gat ggc gag cgc ctt gta aag agt cca cag 645
 Ile Pro Leu Glu Ser Thr Asp Gly Glu Arg Leu Val Lys Ser Pro Gln
 165 170 175
 tgc tct aat cca ggg ctc tgt gtc cag ccc cat cac ata ggg gtt tct 693
 Cys Ser Asn Pro Gly Leu Cys Val Gln Pro His His Ile Gly Val Ser
 180 185 190
 gta aag gaa ctc gat tta tat ttg gca tac ttt gta cat gca gca gat 741
 Val Lys Glu Leu Asp Leu Tyr Leu Ala Tyr Phe Val His Ala Ala Asp
 195 200 205 210

tca agt caa tct gaa agt ccc agc cag cca agt gaa gct gac att aag	789
Ser Ser Gln Ser Glu Ser Pro Ser Gln Pro Ser Glu Ala Asp Ile Lys	
215 220 225	
gac cag cca gaa aat gga cat ttg ggc ttc cag gac agc ttt gtc aca	837
Asp Gln Pro Glu Asn Gly His Leu Gly Phe Gln Asp Ser Phe Val Thr	
230 235 240	
tca ggt gtt ttc agt gtg act gag cta gta aga gtg tca caa aca cca	885
Ser Gly Val Phe Ser Val Thr Glu Leu Val Arg Val Ser Gln Thr Pro	
245 250 255	
ata gct gca gga acc ggc ccc aat ttt tct ctc tct gat ttg gaa agt	933
Ile Ala Ala Gly Thr Gly Pro Asn Phe Ser Leu Ser Asp Leu Glu Ser	
260 265 270	
tct tca tac tac agc atg agt cca gga gca atg agg agg tct ctg ccc	981
Ser Ser Tyr Tyr Ser Met Ser Pro Gly Ala Met Arg Arg Ser Leu Pro	
275 280 285 290	
agc aca tcc tct acc agc tct aca aag cgc ctc aag tct gtg gag gat	1029
Ser Thr Ser Ser Thr Ser Ser Thr Lys Arg Leu Lys Ser Val Glu Asp	
295 300 305	
gaa atg gac agt cct ggt gaa gaa cca ttt tac aca ggc caa ggg cgc	1077
Glu Met Asp Ser Pro Gly Glu Glu Pro Phe Tyr Thr Gly Gln Gly Arg	
310 315 320	
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Ser Pro Gly Ser Gly Ser Gln Ser Ser Gly Trp His Glu Val Glu Pro	
325 330 335	
ggc ttg cca tct cca agc aca ctg aag aag tct gag aag tct ggt ttc	1173
Gly Leu Pro Ser Pro Ser Thr Leu Lys Lys Ser Glu Lys Ser Gly Phe	
340 345 350	
agc agc ccc tcc cct tcg cag acc tcc tcc ctg gga aca gca ttc aca	1221
Ser Ser Pro Ser Pro Ser Gln Thr Ser Ser Leu Gly Thr Ala Phe Thr	

355	360	365	370	
cag cat cac cga cct gtc att aca gga ccc aga gca agt cca cat gcg	1269			
Gln His His Arg Pro Val Ile Thr Gly Pro Arg Ala Ser Pro His Ala				
375	380	385		
acg cca tcg act ctc cac ttt cca acg tca ccc atc atc cag cag cct	1317			
Thr Pro Ser Thr Leu His Phe Pro Thr Ser Pro Ile Ile Gln Gln Pro				
390	395	400		
ggg cct tac ttc tca cac cca gcc atc cgt tac cac cct cag gag acg	1365			
Gly Pro Tyr Phe Ser His Pro Ala Ile Arg Tyr His Pro Gln Glu Thr				
405	410	415		
ctg aaa gag ttt gtc caa ctt gtc tgt cct gat gct ggt cag caa gct	1413			
Leu Lys Glu Phe Val Gln Leu Val Cys Pro Asp Ala Gly Gln Gln Ala				
420	425	430		
gga cag gtg ggg ttc ctc aat ccc aat gga agc agt caa ggc aag gtg	1461			
Gly Gln Val Gly Phe Leu Asn Pro Asn Gly Ser Ser Gln Gly Lys Val				
435	440	445	450	
cac aac cca ttc ctc ccc acc cca atg ttg ccg ccg ccg cca cca cca	1509			
His Asn Pro Phe Leu Pro Thr Pro Met Leu Pro Pro Pro Pro Pro Pro				
455	460	465		
ccg atg gcc agg cct gtg cct ctg ccc atg cca gac acc aag cct cca	1557			
Pro Met Ala Arg Pro Val Pro Leu Pro Met Pro Asp Thr Lys Pro Pro				
470	475	480		
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Thr Thr Ser Thr Glu Gly Gly Ala Ala Ser Pro Thr Ser Pro Thr Tyr				
485	490	495		
tcg aca ccc agc acc tcc ccc gca aac cga ttc gtc agt gtt gga cca	1653			
Ser Thr Pro Ser Thr Ser Pro Ala Asn Arg Phe Val Ser Val Gly Pro				
500	505	510		
cgg gat cca agc ttt gta aat atc cct caa cag aca cag tcc tgg tac	1701			

Arg Asp Pro Ser Phe Val Asn Ile Pro Gln Gln Thr Gln Ser Trp Tyr

515

520

525

530

cig gga taa aagttgcagc atcccacat cctccagaca gaccacctga 1750

Leu Gly

cccccttctca actctgtaac atggacgcaa cctcaacccg gcgcagttac aacttcactg 1810

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tgggtcaaaca gcaaaggcca taactttttg ggattctttt tttttctttt tttctttttt 1930

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3296

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<211> 532

<212> PRT

<213> Mus musculus

<400> 403

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35 40 45
Phe Ala Tyr Thr Trp Phe Asn Leu Gln Ala Arg Lys Arg Lys Tyr Phe
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Lys Lys His Glu Lys Arg Met Ser Lys Glu Glu Glu Arg Ala Val Lys
65 70 75 80
Asp Glu Leu Leu Ser Glu Lys Pro Glu Val Lys Gln Lys Trp Ala Ser
85 90 95
Arg Leu Leu Ala Lys Leu Arg Lys Asp Ile Arg Pro Glu Tyr Arg Glu
100 105 110
Asp Phe Val Leu Thr Val Thr Gly Lys Lys Pro Pro Cys Cys Val Leu
115 120 125
Ser Asn Pro Asp Gln Lys Gly Lys Met Arg Arg Ile Asp Cys Leu Arg
130 135 140
Gln Ala Asp Lys Val Trp Arg Leu Asp Leu Val Met Val Ile Leu Phe
145 150 155 160
Lys Gly Ile Pro Leu Glu Ser Thr Asp Gly Glu Arg Leu Val Lys Ser

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Val Ser Val Lys Glu Leu Asp Leu Tyr Leu Ala Tyr Phe Val His Ala		
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Ala Asp Ser Ser Gln Ser Glu Ser Pro Ser Gln Pro Ser Glu Ala Asp		
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Ile Lys Asp Gln Pro Glu Asn Gly His Leu Gly Phe Gln Asp Ser Phe		
225	230	235
Val Thr Ser Gly Val Phe Ser Val Thr Glu Leu Val Arg Val Ser Gln		
245	250	255
Thr Pro Ile Ala Ala Gly Thr Gly Pro Asn Phe Ser Leu Ser Asp Leu		
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Glu Ser Ser Ser Tyr Tyr Ser Met Ser Pro Gly Ala Met Arg Arg Ser		
275	280	285
Leu Pro Ser Thr Ser Ser Thr Ser Ser Thr Lys Arg Leu Lys Ser Val		
290	295	300
Glu Asp Glu Met Asp Ser Pro Gly Glu Glu Pro Phe Tyr Thr Gly Gln		
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Gly Arg Ser Pro Gly Ser Gly Ser Gln Ser Ser Gly Trp His Glu Val		
325	330	335
Glu Pro Gly Leu Pro Ser Pro Ser Thr Leu Lys Lys Ser Glu Lys Ser		
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Gly Phe Ser Ser Pro Ser Pro Ser Gln Thr Ser Ser Leu Gly Thr Ala		
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Phe Thr Gln His His Arg Pro Val Ile Thr Gly Pro Arg Ala Ser Pro		
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His Ala Thr Pro Ser Thr Leu His Phe Pro Thr Ser Pro Ile Ile Gln		
385	390	395
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Gln Pro Gly Pro Tyr Phe Ser His Pro Ala Ile Arg Tyr His Pro Gln
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 420 425 430
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 Lys Val His Asn Pro Phe Leu Pro Thr Pro Met Leu Pro Pro Pro Pro
 450 455 460
 Pro Pro Pro Met Ala Arg Pro Val Pro Leu Pro Met Pro Asp Thr Lys
 465 470 475 480
 Pro Pro Thr Thr Ser Thr Glu Gly Gly Ala Ala Ser Pro Thr Ser Pro
 485 490 495
 Thr Tyr Ser Thr Pro Ser Thr Ser Pro Ala Asn Arg Phe Val Ser Val
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<213> Mus musculus

<220>

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<222> (387).. (830)

<400> 404

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Met Ala Leu Lys Arg Ile His Lys Glu

1

5

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 Val Gly Asp Asp Met Phe His Trp Gln Ala Thr Ile Met Gly Pro Asn
 30 35 40

gac agc ccc tat cag ggt gga gta ttt ttc ttg aca att cat ttc cca 557
 Asp Ser Pro Tyr Gln Gly Gly Val Phe Phe Leu Thr Ile His Phe Pro
 45 50 55

aca gat tac ccc ttc aaa ccg cct aag gtt gca ttt aca aca aga att 605
 Thr Asp Tyr Pro Phe Lys Pro Pro Lys Val Ala Phe Thr Thr Arg Ile
 60 65 70

tat cac cca aat att aac agt aat ggc agc att tgt ctt gat att cta 653
 Tyr His Pro Asn Ile Asn Ser Asn Gly Ser Ile Cys Leu Asp Ile Leu
 75 80 85

cgg tca cag tgg tct cca gca cta act att tca aaa gta ctt ttg tcc 701
 Arg Ser Gln Trp Ser Pro Ala Leu Thr Ile Ser Lys Val Leu Leu Ser
 90 95 100 105

atc tgt tct ctg ttg tgt gat ccc aat cca gat gat cct tta gtg cct 749
 Ile Cys Ser Leu Leu Cys Asp Pro Asn Pro Asp Asp Pro Leu Val Pro

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Glu Ile Ala Arg Ile Tyr Lys Thr Asp Arg Glu Lys Tyr Asn Arg Ile			
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Ala Arg Glu Trp Thr Gln Lys Tyr Ala Met			
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<211> 147

<212> PRT

<213> Mus musculus

<400> 405

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 35 40 45
 Val Phe Phe Leu Thr Ile His Phe Pro Thr Asp Tyr Pro Phe Lys Pro
 50 55 60
 Pro Lys Val Ala Phe Thr Thr Arg Ile Tyr His Pro Asn Ile Asn Ser
 65 70 75 80
 Asn Gly Ser Ile Cys Leu Asp Ile Leu Arg Ser Gln Trp Ser Pro Ala
 85 90 95
 Leu Thr Ile Ser Lys Val Leu Leu Ser Ile Cys Ser Leu Leu Cys Asp
 100 105 110
 Pro Asn Pro Asp Asp Pro Leu Val Pro Glu Ile Ala Arg Ile Tyr Lys
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Tyr Ala Met

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<210> 406

<211> 3577

<212> DNA

<213> Mus musculus

<400> 406

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<210> 407

<211> 3792

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (285).. (3008)

<400> 407

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Val Glu Ser Ala

att gca gaa ggg ggt gct tct cgt ttc act gct tct tcg ggc gga gga 344
 Ile Ala Glu Gly Gly Ala Ser Arg Phe Thr Ala Ser Ser Gly Gly Gly
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 Gly Ser Arg Gly Ala Pro Gln His Tyr Pro Lys Thr Ala Gly Asn Ser
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 Asn Glu Lys Glu Arg His Asp Ala Ile Phe Arg Lys Val Arg Gly Ile
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165	170	175	180
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185	190	195	
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Phe Ile Gly Glu Leu Gly Lys Leu Asp Leu Ile His Glu Ser Ile Leu			
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Lys Asp Met Gly Glu Asp Leu Glu Cys Leu Cys Gln Ile Met Arg Thr			
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Val Gly Pro Arg Leu Asp His Glu Arg Ala Lys Ser Leu Met Asp Gln			
265	270	275	
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Arg Ile Arg Phe Leu Leu Gln Asp Thr Val Glu Leu Arg Glu His His			
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 Gln Ser Lys Asp Met Pro Pro Arg Phe Ser Lys Lys Gly Gln Leu Asn
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 Ala Asp Glu Ile Arg Leu Arg Pro Asp Gln Ser Phe Leu Met Asn Lys
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 Asn Gln Val Pro Met Leu Gln Pro Gln Ile Thr Met Ile Pro Pro Ser
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 Thr Ser Lys Lys Pro Pro,Pro Ser Lys Glu Glu Leu Leu Lys Leu Thr
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 Met Leu Ser Lys Val Ile Ile Leu Ser Leu Asp Arg Ser Asp Glu Asp
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Ile Lys Leu Asp Pro Ser Pro Gln Thr Ile Tyr Lys Trp Ser Lys Asp			
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Asn Ile Ser Pro Thr Leu His Val Asp Lys Gly Phe Val Asn Ile Leu			
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 790 795 800
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 Glu Lys Gln Leu Leu Leu Ser Phe Lys Pro Val Met Gln Lys Phe Leu
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 His Asp His Val Asp Val Gln Val Ser Ala Leu Tyr Ala Leu Gln Val
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 His Cys Tyr Asn Ser Ser Phe Pro Gln Gly Met Leu Leu Arg Phe Phe
 840 845 850
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 Val His Phe Tyr Asp Met Glu Ile Ile Glu Glu Glu Ala Phe Leu Ala
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 Trp Lys Glu Asp Ile Thr Gln Glu Phe Pro Gly Lys Gly Lys Ala Leu
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<212> PRT

<213> Mus musculus

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 Gly Val Ile Leu Leu Ile Val Asp Lys Ala Leu Glu Glu Pro Lys Tyr
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 Asn Phe Asp Gly Pro Ala Ala Glu Gly Gln Pro Gly Gln Lys Gln Ser
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 Lys Thr Ile Asn Gln Ile Arg Gln Asp Ala Val Lys Asp Leu Gly Val

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				Met	Ser
				Arg	Asp
				Phe	Phe
				Leu	
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Glu	Gly	Pro	Leu	Met	Pro
			Pro	Arg	Met
				Lys	Met
				Asp	Arg
				Asp	Pro
				Leu	
	355		360		365
Gly	Gly	Leu	Ala	Asp	Met
			Phe	Gly	Gln
				Met	Pro
				Gly	Ser
				Gly	Ile
				Gly	
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Thr	Gly	Pro	Gly	Val	Ile
			Gln	Asp	Arg
			Phe	Pro	Pro
			Thr	Met	Gly
			Arg		
	385		390		395
					400
His	Arg	Ser	Asn	Gln	Leu
			Phe	Asn	Gly
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				Gly	His
				Ile	Met
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Pro	Thr	Gln	Ser	Gln	Phe
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			Gln	Ser	Gln
			Gly	Leu	Leu
			Ser		
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			Phe	Ser	Lys
			Lys		
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			Glu	Ile	Arg
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			Asp	Gln	Ser
			Phe		
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			Val	Pro	Met
			Leu	Gln	Pro
			Gln	Ile	Thr
			Met		
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			Pro	Pro	Leu
			Gly		
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			Leu	Ile	Gln
			Glu		
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			Leu		
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785 790 795 800
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 850 855 860
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 Thr Cys Leu Leu Ile Val Phe Ser Lys Asp Glu Phe Pro Glu Val Tyr
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Val Ala Asn Lys Lys Asp Leu Arg Ser Asp Glu His Val Arg Thr Glu
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ctg gcc cgc atg aag cag gag cca gtg cgc acg gat gac ggc cgc gcc 4390
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<400> 411

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 Glu Lys Trp Val Pro Glu Val Lys His Phe Cys Pro Asn Val Pro Ile
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 Ile Leu Val Ala Asn Lys Lys Asp Leu Arg Ser Asp Glu His Val Arg
 115 120 125
 Thr Glu Leu Ala Arg Met Lys Gln Glu Pro Val Arg Thr Asp Asp Gly
 130 135 140
 Arg Ala Met Ala Val Arg Ile Gln Ala Tyr Asp Tyr Leu Glu Cys Ser
 145 150 155 160
 Ala Lys Thr Lys Glu Gly Val Arg Glu Val Phe Glu Thr Ala Thr Arg
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180

185

190

Cys Lys Val Leu

195

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<211> 3276

<212> DNA

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<222> (389).. (1594)

<400> 412

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 gattggagag gctgattcgc gctccagctg ccaaggcaac ttccagcttg gctgtttact 180
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 gaagtcagct gctgggactc ctctgaaggc atccaggaag gggggcaaga ggggttaaaa 300
 gacagtcgaa atccccccaa ctgctcacc cctgcccacc gcctgtgctg tggggttctg 360
 agaggacctt gctctgtcct gggaagca atg caa gtc tcc ata gcc tgc aca 412

Met Gln Val Ser Ile Ala Cys Thr

1

5

gag cac aat ttg aag agt cga aat ggt gag gac cga ctt ctg agc aag 460

Glu His Asn Leu Lys Ser Arg Asn Gly Glu Asp Arg Leu Leu Ser Lys

10

15

20

cag agc tcc acc gcc ccc aat gtg gtg aac gca gcc cgg gcc aaa ttc 508

Gln Ser Ser Thr Ala Pro Asn Val Val Asn Ala Ala Arg Ala Lys Phe

25

30

35

40

cgc act gtc gct atc atc gct cgc agc ctg ggg acc ttc acc cct cag 556
 Arg Thr Val Ala Ile Ile Ala Arg Ser Leu Gly Thr Phe Thr Pro Gln
 45 50 55
 cat cac att tct ctc aaa gag tcc acc gca aag cag act ggc atg aaa 604
 His His Ile Ser Leu Lys Glu Ser Thr Ala Lys Gln Thr Gly Met Lys
 60 65 70
 tat agg aat ctt ggg aaa tca gga ctc aga gtt tgc ttc ggt ctt 652
 Tyr Arg Asn Leu Gly Lys Ser Gly Leu Arg Val Ser Cys Leu Gly Leu
 75 80 85
 gga aca tgg gtg aca ttt gga ggt caa atc tca gat gaa gtt gct gaa 700
 Gly Thr Trp Val Thr Phe Gly Gly Gln Ile Ser Asp Glu Val Ala Glu
 90 95 100
 cgg ctg atg aca att gcc tac gaa agt gga gtt aat ctc ttc gac acg 748
 Arg Leu Met Thr Ile Ala Tyr Glu Ser Gly Val Asn Leu Phe Asp Thr
 105 110 115 120
 gct gag gtc tat gct gct ggg aag gct gag gtg att ctg gga agc atc 796
 Ala Glu Val Tyr Ala Ala Gly Lys Ala Glu Val Ile Leu Gly Ser Ile
 125 130 135
 atc aag aag aaa ggc tgg agg agg tcc agc ttg gtc atc aca acc aaa 844
 Ile Lys Lys Lys Gly Trp Arg Arg Ser Ser Leu Val Ile Thr Thr Lys
 140 145 150
 ctc tac tgg ggt gga aaa gct gag aca gaa agg gga ctg tca aga aag 892
 Leu Tyr Trp Gly Gly Lys Ala Glu Thr Glu Arg Gly Leu Ser Arg Lys
 155 160 165
 cat atc att gaa gga ctg aac ggc tcc ctc cag agg ctg caa ctg gaa 940
 His Ile Ile Glu Gly Leu Asn Gly Ser Leu Gln Arg Leu Gln Leu Glu
 170 175 180
 tac gtg gat gtg gtc ttt gca aat cgc cca gac agc aac act ccc atg 988
 Tyr Val Asp Val Val Phe Ala Asn Arg Pro Asp Ser Asn Thr Pro Met

185	190	195	200	
gaa gaa atc gtt cga gcc atg acg cac gtg atc aac caa ggc atg gcc				1036
Glu Glu Ile Val Arg Ala Met Thr His Val Ile Asn Gln Gly Met Ala				
	205	210	215	
atg tac tgg ggc acc tcg agg tgg agc gcg atg gag atc atg gaa gcc				1084
Met Tyr Trp Gly Thr Ser Arg Trp Ser Ala Met Glu Ile Met Glu Ala				
	220	225	230	
tac tct gtc gca cgg cag ttc aac atg atc ccg cct gtc tgt gag caa				1132
Tyr Ser Val Ala Arg Gln Phe Asn Met Ile Pro Pro Val Cys Glu Gln				
	235	240	245	
gct gag tac cat ctt ttc cag aga gag aag gtg gag gtc cag ctg ccg				1180
Ala Glu Tyr His Leu Phe Gln Arg Glu Lys Val Glu Val Gln Leu Pro				
	250	255	260	
gag ctc tac cat aaa ata gga gtt ggt gca atg aca tgg tct cca ctt				1228
Glu Leu Tyr His Lys Ile Gly Val Gly Ala Met Thr Trp Ser Pro Leu				
	265	270	275	280
gct tgt gga att att tca gga aaa tat gga aat ggg gtg cca gaa agt				1276
Ala Cys Gly Ile Ile Ser Gly Lys Tyr Gly Asn Gly Val Pro Glu Ser				
	285	290	295	
tct aga gct tca ctg aag tgc tac cag tgg ttg aag gaa aga atc gta				1324
Ser Arg Ala Ser Leu Lys Cys Tyr Gln Trp Leu Lys Glu Arg Ile Val				
	300	305	310	
agt gaa gaa ggg aga aaa cag caa aac aag ctg aaa gac ctc tct cca				1372
Ser Glu Glu Gly Arg Lys Gln Gln Asn Lys Leu Lys Asp Leu Ser Pro				
	315	320	325	
atc gct gag cgc ctg ggg tgc acg cta cct cag ctg gct gtg gcg tgg				1420
Ile Ala Glu Arg Leu Gly Cys Thr Leu Pro Gln Leu Ala Val Ala Trp				
	330	335	340	
tgc ctg aga aat gag ggt gtg agt tct gtg ctc ctg gga tca tcc act				1468

Cys Leu Arg Asn Glu Gly Val Ser Ser Val Leu Leu Gly Ser Ser Thr
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 Pro Glu Gln Leu Ile Glu Asn Leu Gly Ala Ile Gln Val Leu Pro Lys
 365 370 375
 atg aca tct cac gtg gtg aac gag att gat aac ata ctg cgc aac aag 1564
 Met Thr Ser His Val Val Asn Glu Ile Asp Asn Ile Leu Arg Asn Lys
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 Pro Tyr Ser Lys Lys Asp Tyr Arg Ser
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<211> 401

<212> PRT

<213> Mus musculus

<400> 413

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				20				25					30		
Val	Asn	Ala	Ala	Arg	Ala	Lys	Phe	Arg	Thr	Val	Ala	Ile	Ile	Ala	Arg
				35				40					45		
Ser	Leu	Gly	Thr	Phe	Thr	Pro	Gln	His	His	Ile	Ser	Leu	Lys	Glu	Ser
				50				55					60		
Thr	Ala	Lys	Gln	Thr	Gly	Met	Lys	Tyr	Arg	Asn	Leu	Gly	Lys	Ser	Gly
				65				70					75		80
Leu	Arg	Val	Ser	Cys	Leu	Gly	Leu	Gly	Thr	Trp	Val	Thr	Phe	Gly	Gly
				85				90					95		

Gln Ile Ser Asp Glu Val Ala Glu Arg Leu Met Thr Ile Ala Tyr Glu
 100 105 110
 Ser Gly Val Asn Leu Phe Asp Thr Ala Glu Val Tyr Ala Ala Gly Lys
 115 120 125
 Ala Glu Val Ile Leu Gly Ser Ile Ile Lys Lys Lys Gly Trp Arg Arg
 130 135 140
 Ser Ser Leu Val Ile Thr Thr Lys Leu Tyr Trp Gly Gly Lys Ala Glu
 145 150 155 160
 Thr Glu Arg Gly Leu Ser Arg Lys His Ile Ile Glu Gly Leu Asn Gly
 165 170 175
 Ser Leu Gln Arg Leu Gln Leu Glu Tyr Val Asp Val Val Phe Ala Asn
 180 185 190
 Arg Pro Asp Ser Asn Thr Pro Met Glu Glu Ile Val Arg Ala Met Thr
 195 200 205
 His Val Ile Asn Gln Gly Met Ala Met Tyr Trp Gly Thr Ser Arg Trp
 210 215 220
 Ser Ala Met Glu Ile Met Glu Ala Tyr Ser Val Ala Arg Gln Phe Asn
 225 230 235 240
 Met Ile Pro Pro Val Cys Glu Gln Ala Glu Tyr His Leu Phe Gln Arg
 245 250 255
 Glu Lys Val Glu Val Gln Leu Pro Glu Leu Tyr His Lys Ile Gly Val
 260 265 270
 Gly Ala Met Thr Trp Ser Pro Leu Ala Cys Gly Ile Ile Ser Gly Lys
 275 280 285
 Tyr Gly Asn Gly Val Pro Glu Ser Ser Arg Ala Ser Leu Lys Cys Tyr
 290 295 300
 Gln Trp Leu Lys Glu Arg Ile Val Ser Glu Glu Gly Arg Lys Gln Gln
 305 310 315 320
 Asn Lys Leu Lys Asp Leu Ser Pro Ile Ala Glu Arg Leu Gly Cys Thr

325 330 335
 Leu Pro Gln Leu Ala Val Ala Trp Cys Leu Arg Asn Glu Gly Val Ser
 340 345 350
 Ser Val Leu Leu Gly Ser Ser Thr Pro Glu Gln Leu Ile Glu Asn Leu
 355 360 365
 Gly Ala Ile Gln Val Leu Pro Lys Met Thr Ser His Val Val Asn Glu
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 Ser

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<211> 1251

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (1251)

<400> 414

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 atc gac ccg gag gag acg gta aag gca ttg aaa gag aag att gaa tct 96
 Ile Asp Pro Glu Glu Thr Val Lys Ala Leu Lys Glu Lys Ile Glu Ser
 20 25 30
 gaa aag ggg aaa gat gcc ttt ccg gta gca ggt cag aag tta att tat 144
 Glu Lys Gly Lys Asp Ala Phe Pro Val Ala Gly Gln Lys Leu Ile Tyr

35	40	45	
gcc ggc aaa atc ctc agt gat gat act gct ctc aaa gaa tat aaa att	192		
Ala Gly Lys Ile Leu Ser Asp Asp Thr Ala Leu Lys Glu Tyr Lys Ile			
50	55	60	
gat gag aaa aac ttt gtg gtg gtt atg gtg aca aaa ccc aaa gca gtg	240		
Asp Glu Lys Asn Phe Val Val Val Met Val Thr Lys Pro Lys Ala Val			
65	70	75	80
aca aca gca gtg cca gct aca acc cag cca tca agt act ccc agc ccc	288		
Thr Thr Ala Val Pro Ala Thr Thr Gln Pro Ser Ser Thr Pro Ser Pro			
85	90	95	
act aca gtc agt tct tcc cca gca gtg gct gcg gcc cag gct cca gct	336		
Thr Thr Val Ser Ser Ser Pro Ala Val Ala Ala Ala Gln Ala Pro Ala			
100	105	110	
ccc acc cct gct ctg gct ccc act tcc act cct gcc tcc act act cca	384		
Pro Thr Pro Ala Leu Ala Pro Thr Ser Thr Pro Ala Ser Thr Thr Pro			
115	120	125	
gcc tcc aca aca gcc tct tct gaa ccc gca cct gct ggt gcc act cag	432		
Ala Ser Thr Thr Ala Ser Ser Glu Pro Ala Pro Ala Gly Ala Thr Gln			
130	135	140	
cct gag aaa cct gca gaa aag cca gcc cag aca cca gtg ctt act agc	480		
Pro Glu Lys Pro Ala Glu Lys Pro Ala Gln Thr Pro Val Leu Thr Ser			
145	150	155	160
cca gca cca gct gac agt aca cca gga gat tct tcc cgg tca aat ctt	528		
Pro Ala Pro Ala Asp Ser Thr Pro Gly Asp Ser Ser Arg Ser Asn Leu			
165	170	175	
ttt gaa gat gca aca agt gcc ctt gtg aca ggt cag tct tat gag aat	576		
Phe Glu Asp Ala Thr Ser Ala Leu Val Thr Gly Gln Ser Tyr Glu Asn			
180	185	190	
atg gta act gag atc atg tca atg ggc tat gaa cga gaa caa gta att	624		

Met Val Thr Glu Ile Met Ser Met Gly Tyr Glu Arg Glu Gln Val Ile	
195 200 205	
gca gcc ctg aga gcc agc ttc aac aac cct gac aga gct gtg gaa tat	672
Ala Ala Leu Arg Ala Ser Phe Asn Asn Pro Asp Arg Ala Val Glu Tyr	
210 215 220	
ctt cta atg gga atc cct gga gat aga gaa agt cag gct gtg gtt gac	720
Leu Leu Met Gly Ile Pro Gly Asp Arg Glu Ser Gln Ala Val Val Asp	
225 230 235 240	
cct cct cct cag gct gtg agt act gga act cct cag tct cca gca gta	768
Pro Pro Pro Gln Ala Val Ser Thr Gly Thr Pro Gln Ser Pro Ala Val	
245 250 255	
gct gca gct gca gca acc acg aca gca act aca aca acc act tct gga	816
Ala Ala Ala Ala Ala Thr Thr Thr Ala Thr Thr Thr Thr Thr Ser Gly	
260 265 270	
ggc cac ccc ctt gaa ttt tta cgg aat cag cct cag ttt caa cag atg	864
Gly His Pro Leu Glu Phe Leu Arg Asn Gln Pro Gln Phe Gln Gln Met	
275 280 285	
aga caa att atc cag cag aat cct tct ttg ctg cca gcc ttg cta cag	912
Arg Gln Ile Ile Gln Gln Asn Pro Ser Leu Leu Pro Ala Leu Leu Gln	
290 295 300	
cag ata ggt cgg gag aac cct cag ctg ctg cag caa att agc caa cac	960
Gln Ile Gly Arg Glu Asn Pro Gln Leu Leu Gln Gln Ile Ser Gln His	
305 310 315 320	
cag gag cat ttt att cag atg ctg aat gaa cca gtt cag gaa gca ggc	1008
Gln Glu His Phe Ile Gln Met Leu Asn Glu Pro Val Gln Glu Ala Gly	
325 330 335	
ggt caa ggc gga gga ggc ggt ggc gga gga ggc ggt ggc gga gga ggc	1056
Gly Gln Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly	
340 345 350	

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ggc gga gga att gca gaa gct gga agt ggg cac atg aat tac att caa 1104
Gly Gly Gly Ile Ala Glu Ala Gly Ser Gly His Met Asn Tyr Ile Gln
      355              360              365
gta aca cct cag gag aaa gaa gct ata gaa cgg tta aag gca tta gga 1152
Val Thr Pro Gln Glu Lys Glu Ala Ile Glu Arg Leu Lys Ala Leu Gly
      370              375              380
ttt cct gaa gga ctt gtg att caa gca tat ttt gct tgt gag aag aat 1200
Phe Pro Glu Gly Leu Val Ile Gln Ala Tyr Phe Ala Cys Glu Lys Asn
385              390              395              400
gag aat ctg gct gcc aac ttt ctt cta cag cag aac ttt gat gaa gac 1248
Glu Asn Leu Ala Ala Asn Phe Leu Leu Gln Gln Asn Phe Asp Glu Asp
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tga 1251

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<210> 415

<211> 416

<212> PRT

<213> Mus musculus

<400> 415

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Ile Asp Pro Glu Glu Thr Val Lys Ala Leu Lys Glu Lys Ile Glu Ser
      20              25              30
Glu Lys Gly Lys Asp Ala Phe Pro Val Ala Gly Gln Lys Leu Ile Tyr
      35              40              45
Ala Gly Lys Ile Leu Ser Asp Asp Thr Ala Leu Lys Glu Tyr Lys Ile
      50              55              60

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Asp Glu Lys Asn Phe Val Val Val Met Val Thr Lys Pro Lys Ala Val
 65 70 75 80
 Thr Thr Ala Val Pro Ala Thr Thr Gln Pro Ser Ser Thr Pro Ser Pro
 85 90 95
 Thr Thr Val Ser Ser Ser Pro Ala Val Ala Ala Ala Gln Ala Pro Ala
 100 105 110
 Pro Thr Pro Ala Leu Ala Pro Thr Ser Thr Pro Ala Ser Thr Thr Pro
 115 120 125
 Ala Ser Thr Thr Ala Ser Ser Glu Pro Ala Pro Ala Gly Ala Thr Gln
 130 135 140
 Pro Glu Lys Pro Ala Glu Lys Pro Ala Gln Thr Pro Val Leu Thr Ser
 145 150 155 160
 Pro Ala Pro Ala Asp Ser Thr Pro Gly Asp Ser Ser Arg Ser Asn Leu
 165 170 175
 Phe Glu Asp Ala Thr Ser Ala Leu Val Thr Gly Gln Ser Tyr Glu Asn
 180 185 190
 Met Val Thr Glu Ile Met Ser Met Gly Tyr Glu Arg Glu Gln Val Ile
 195 200 205
 Ala Ala Leu Arg Ala Ser Phe Asn Asn Pro Asp Arg Ala Val Glu Tyr
 210 215 220
 Leu Leu Met Gly Ile Pro Gly Asp Arg Glu Ser Gln Ala Val Val Asp
 225 230 235 240
 Pro Pro Pro Gln Ala Val Ser Thr Gly Thr Pro Gln Ser Pro Ala Val
 245 250 255
 Ala Ala Ala Ala Ala Thr Thr Thr Ala Thr Thr Thr Thr Thr Ser Gly
 260 265 270
 Gly His Pro Leu Glu Phe Leu Arg Asn Gln Pro Gln Phe Gln Gln Met
 275 280 285
 Arg Gln Ile Ile Gln Gln Asn Pro Ser Leu Leu Pro Ala Leu Leu Gln

290	295	300
Gln Ile Gly Arg Glu Asn Pro Gln Leu Leu Gln Gln Ile Ser Gln His		
305	310	315 320
Gln Glu His Phe Ile Gln Met Leu Asn Glu Pro Val Gln Glu Ala Gly		
325	330	335
Gly Gln Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly		
340	345	350
Gly Gly Gly Ile Ala Glu Ala Gly Ser Gly His Met Asn Tyr Ile Gln		
355	360	365
Val Thr Pro Gln Glu Lys Glu Ala Ile Glu Arg Leu Lys Ala Leu Gly		
370	375	380
Phe Pro Glu Gly Leu Val Ile Gln Ala Tyr Phe Ala Cys Glu Lys Asn		
385	390	395 400
Glu Asn Leu Ala Ala Asn Phe Leu Leu Gln Gln Asn Phe Asp Glu Asp		
405	410	415

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<211> 342

<212> DNA

<213> Mus musculus

<400> 416

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 aaggacatgt ttggtagtaa ctaggaactt ctgagccctg gtgaatggc ttagaacagt 240
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<210> 417

<211> 2052

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (146).. (1012)

<400> 417

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 gtagcggatga cagcgacccg gagtc atg agc gac agc ggc gag cag aac tac 172

Met Ser Asp Ser Gly Glu Gln Asn Tyr

1

5

ggc gag cgg gaa tcc cgt tct gct tcc cga agt gga agt gct cac gga 220
 Gly Glu Arg Glu Ser Arg Ser Ala Ser Arg Ser Gly Ser Ala His Gly

10

15

20

25

tcg ggg aaa tct gca cgg cat aca cct gca agg tct cgc tcc aag gaa 268
 Ser Gly Lys Ser Ala Arg His Thr Pro Ala Arg Ser Arg Ser Lys Glu

30

35

40

gac tca agg cgt tct aga tca aag tcc agg tcc agg tct gaa tct agg 316
 Asp Ser Arg Arg Ser Arg Ser Lys Ser Arg Ser Arg Ser Glu Ser Arg

45

50

55

tct aga tcc aga aga agt tct aga agg cat tat aca agg tca cga tca 364
 Ser Arg Ser Arg Arg Ser Ser Arg Arg His Tyr Thr Arg Ser Arg Ser

60

65

70

cga tct cgc tcg cat aga cga tcc cgg agc agg tct tac agc cga gat 412
 Arg Ser Arg Ser His Arg Arg Ser Arg Ser Arg Ser Tyr Ser Arg Asp

75	80	85	
tat cgc agg cgc cac agc cac agc cat tct ccc atg tct act cga agg	460		
Tyr Arg Arg Arg His Ser His Ser His Ser Pro Met Ser Thr Arg Arg			
90	95	100	105
cgt cat gtt ggg aac cgg gca aat cct gac ccc aac tgt tgt ctt ggc	508		
Arg His Val Gly Asn Arg Ala Asn Pro Asp Pro Asn Cys Cys Leu Gly			
110	115	120	
gtg ttt ggg ttg agc tta tac acc aca gaa aga gac cta aga gaa gtg	556		
Val Phe Gly Leu Ser Leu Tyr Thr Thr Glu Arg Asp Leu Arg Glu Val			
125	130	135	
ttc tct aaa tat ggc ccc att gct gat gtg tct att gta tat gac cag	604		
Phe Ser Lys Tyr Gly Pro Ile Ala Asp Val Ser Ile Val Tyr Asp Gln			
140	145	150	
caa tct aga cgt tca aga gga ttt gcc ttt gta tat ttt gaa aat gta	652		
Gln Ser Arg Arg Ser Arg Gly Phe Ala Phe Val Tyr Phe Glu Asn Val			
155	160	165	
gac gat gcc aag gaa gct aaa gaa cgt gcc aat gga atg gag ctt gat	700		
Asp Asp Ala Lys Glu Ala Lys Glu Arg Ala Asn Gly Met Glu Leu Asp			
170	175	180	185
ggg cgt cga att aga gtc gat ttc tct ata aca aaa agg ccc cat acc	748		
Gly Arg Arg Ile Arg Val Asp Phe Ser Ile Thr Lys Arg Pro His Thr			
190	195	200	
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Pro Thr Pro Gly Ile Tyr Met Gly Arg Pro Thr Tyr Gly Ser Ser Arg			
205	210	215	
cgc cga gac tat tat gac aga ggg tac gat cgg ggt tat gat gac cgg	844		
Arg Arg Asp Tyr Tyr Asp Arg Gly Tyr Asp Arg Gly Tyr Asp Asp Arg			
220	225	230	
gac tat tac agc aga tca tac aga gga gga ggt ggt gga gga ggt gga	892		

Asp Tyr Tyr Ser Arg Ser Tyr Arg Gly Gly Gly Gly Gly Gly Gly Gly
 235 240 245
 tgg aga gca gct caa gac agg gat cag att tac aga aga cgg tca cct 940
 Trp Arg Ala Ala Gln Asp Arg Asp Gln Ile Tyr Arg Arg Arg Ser Pro
 250 255 260 265
 tct cct tac tac agt cgt gga gga tac agg tca cgt tct cga tca cga 988
 Ser Pro Tyr Tyr Ser Arg Gly Gly Tyr Arg Ser Arg Ser Arg Ser Arg
 270 275 280
 tcc tac tca cct cgt cgc tac taa agcatgaagt tgaagacttt ctgaaacctg 1042
 Ser Tyr Ser Pro Arg Arg Tyr
 285
 ccatagagct gggatatgt ttgtggacaa tattttctat tgtctcctgt ttaaaaagtg 1102
 aacagtgcct agtgaagta ggtagctttt acacctttta tgatgactac ttttggtgga 1162
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<211> 288

<212> PRT

<213> Mus musculus

<400> 418

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      35             40             45
Lys Ser Arg Ser Arg Ser Glu Ser Arg Ser Arg Ser Arg Arg Ser Ser
      50             55             60
Arg Arg His Tyr Thr Arg Ser Arg Ser Arg Ser Arg Ser His Arg Arg
      65             70             75             80
Ser Arg Ser Arg Ser Tyr Ser Arg Asp Tyr Arg Arg Arg His Ser His
      85             90             95
Ser His Ser Pro Met Ser Thr Arg Arg Arg His Val Gly Asn Arg Ala
      100            105            110
Asn Pro Asp Pro Asn Cys Cys Leu Gly Val Phe Gly Leu Ser Leu Tyr
      115            120            125
Thr Thr Glu Arg Asp Leu Arg Glu Val Phe Ser Lys Tyr Gly Pro Ile
      130            135            140
Ala Asp Val Ser Ile Val Tyr Asp Gln Gln Ser Arg Arg Ser Arg Gly
      145            150            155            160
Phe Ala Phe Val Tyr Phe Glu Asn Val Asp Asp Ala Lys Glu Ala Lys
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Glu Arg Ala Asn Gly Met Glu Leu Asp Gly Arg Arg Ile Arg Val Asp

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180	185	190
Phe Ser Ile Thr Lys Arg Pro His Thr Pro Thr Pro Gly Ile Tyr Met		
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Gly Arg Pro Thr Tyr Gly Ser Ser Arg Arg Arg Asp Tyr Tyr Asp Arg		
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Gly Tyr Asp Arg Gly Tyr Asp Asp Arg Asp Tyr Tyr Ser Arg Ser Tyr		
225	230	235
Arg Gly Gly Gly Gly Gly Gly Gly Gly Trp Arg Ala Ala Gln Asp Arg		
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Asp Gln Ile Tyr Arg Arg Arg Ser Pro Ser Pro Tyr Tyr Ser Arg Gly		
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Gly Tyr Arg Ser Arg Ser Arg Ser Arg Ser Tyr Ser Pro Arg Arg Tyr		
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<211> 2681

<212> DNA

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<220>

<221> CDS

<222> (112).. (1887)

<400> 419

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Met Lys

1

tac att ctg gtt act ggt ggt gtt ata tca gga att gga aaa gga gtc 165

Tyr Ile Leu Val Thr Gly Gly Val Ile Ser Gly Ile Gly Lys Gly Val
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 atc gcc agc agt gtg ggc aca ata ctt aaa tca tgt ggc tta cat gta 213
 Ile Ala Ser Ser Val Gly Thr Ile Leu Lys Ser Cys Gly Leu His Val
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 Thr Ser Phe Lys Ile Asp Pro Tyr Ile Asn Ile Asp Ala Gly Thr Phe
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 Ser Pro Tyr Glu His Gly Glu Val Phe Val Leu Asp Asp Gly Gly Glu
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 Thr Lys Asp Asn Asn Leu Thr Thr Gly Lys Ile Tyr Gln Tyr Val Ile
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 aac aag gag cgc aaa ggg gat tac tta ggg aag act gtc cag gtt gtc 453
 Asn Lys Glu Arg Lys Gly Asp Tyr Leu Gly Lys Thr Val Gln Val Val
 100 105 110
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 Pro His Ile Thr Asp Ala Ile Gln Glu Trp Val Met Arg Gln Ala Leu
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 Ile Pro Val Asp Glu Asp Gly Leu Glu Pro Gln Val Cys Val Ile Glu
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 ctt ggt ggc aca gtg gga gac att gaa agc atg ccc ttc att gag gcc 597
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Lys Pro Thr Gln Asn Ser Val Arg Glu Leu Arg Gly Leu Gly Leu Ser	
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Pro Asp Leu Val Val Cys Arg Cys Ser Asn Pro Leu Asp Thr Ser Val	
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Lys Glu Lys Ile Ser Met Phe Cys His Val Glu Pro Glu Gln Val Ile	
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Cys Val His Asp Val Ser Ser Ile Tyr Arg Val Pro Leu Leu Leu Glu	
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Glu Gln Gly Val Val Asp Tyr Phe Leu Arg Arg Leu Asp Leu Pro Ile	
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Glu Arg Gln Ser Arg Lys Met Leu Met Lys Trp Lys Glu Met Ala Asp	
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Tyr Pro Lys Phe Ser Asp Ser Tyr Ala Ser Val Ile Lys Ala Leu Glu	

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His Ser Ala Leu Ala Ile Asn His Lys Leu Glu Ile Lys Tyr Ile Asp			
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Trp Ser Arg Lys Gln Lys Lys Pro Phe Leu Gly Val Cys Leu Gly Ile			
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Gln Leu Ala Val Val Glu Phe Ser Arg Asn Val Leu Gly Trp Gln Asp			
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<211> 591

<212> PRT

<213> Mus musculus

<400> 420

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Val	Ile	Asn	Lys	Glu	Arg	Lys	Gly	Asp	Tyr	Leu	Gly	Lys	Thr	Val	Gln
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 180 185 190
 Lys Thr Lys Pro Thr Gln Asn Ser Val Arg Glu Leu Arg Gly Leu Gly
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 Ser Val Lys Glu Lys Ile Ser Met Phe Cys His Val Glu Pro Glu Gln
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 Pro Ile Glu Arg Gln Ser Arg Lys Met Leu Met Lys Trp Lys Glu Met
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 Gly Lys Tyr Pro Lys Phe Ser Asp Ser Tyr Ala Ser Val Ile Lys Ala
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Ile Ala Trp Ser Arg Lys Gln Lys Lys Pro Phe Leu Gly Val Cys Leu			
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Val Ile Asp Met Pro Glu His Asn Pro Gly Gln Met Gly Gly Thr Met			
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Arg Leu Gly Lys Arg Arg Thr Leu Phe Gln Thr Lys Asn Ser Val Met			
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Glu Leu Glu Asp His Pro Phe Phe Val Gly Val Gln Tyr His Pro Glu			
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Leu Ala Ser Val Gly Arg Leu Pro His Tyr Leu Gln Lys Gly Cys Arg			
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585

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<210> 421

<211> 3364

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<213> Mus musculus

<220>

<221> CDS

<222> (113).. (2974)

<400> 421

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Met Asn

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 Ile Arg Lys Pro Leu Cys Ser Asn Ser Val Val Gly Ala Cys Thr Leu

5

10

15

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 Ile Ser Leu Thr Thr Ala Val Ile Leu Gly His Leu Met Leu Arg Glu

20

25

30

tta atg ctg ctt ccc caa gac ctt cat gag tcc tct tca gga ctg tgg 262
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35

40

45

50

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65

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 Ser Gln Glu Gln Cys Glu Ala Arg Gly Cys Cys Tyr Val Pro Ala Gly
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 Gln Val Leu Lys Glu Pro Gln Ile Gly Gln Pro Trp Cys Phe Phe Pro
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 Gly Tyr Thr Ala Thr Leu Thr Arg Thr Ser Pro Thr Phe Phe Pro Lys
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 Val Glu Phe Ser Glu Glu Pro Phe Gly Val Ile Val Arg Arg Lys Leu

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Arg Ile Thr Leu Trp Asn Arg Asp Thr Pro Pro Ser Gln Gly Thr Asn			
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Pro Phe Val Ile Ser Arg Ser Thr Phe Ser Gly His Gly Arg Tyr Ala	
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Pro Tyr Leu Tyr Thr Leu Phe His Arg Ala His Val Arg Gly Asp Thr				
710	715	720		
gtg gcc cgg ccc ctc ttc ctg gag ttc cgt gag gat ccc agc acc tgg	2326			
Val Ala Arg Pro Leu Phe Leu Glu Phe Arg Glu Asp Pro Ser Thr Trp				
725	730	735		
tct gtg gac cgc cag ctc ttg tgg ggg ccg gcc ctg ctc atc aca cct	2374			
Ser Val Asp Arg Gln Leu Leu Trp Gly Pro Ala Leu Leu Ile Thr Pro				
740	745	750		
gtg ctt gag cct ggg aaa act gaa gtg acg ggc tac ttc ccc aag ggc	2422			
Val Leu Glu Pro Gly Lys Thr Glu Val Thr Gly Tyr Phe Pro Lys Gly				
755	760	765	770	
acg tgg tac aac atg cag gtg gtg tca gtg gat tcc ctc ggt act ctc	2470			
Thr Trp Tyr Asn Met Gln Val Val Ser Val Asp Ser Leu Gly Thr Leu				
775	780	785		
cct tct cca tca tcg gct tca tcc ttc aga tct gct gtc cag agc aag	2518			
Pro Ser Pro Ser Ser Ala Ser Ser Phe Arg Ser Ala Val Gln Ser Lys				
790	795	800		
ggg cag tgg ctg aca ctg gaa gcc cca ctg gat acc atc aac gtg cac	2566			
Gly Gln Trp Leu Thr Leu Glu Ala Pro Leu Asp Thr Ile Asn Val His				
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ctg agg gag ggg tac atc ata ccg ctg cag ggt ccc agc ctc aca acc	2614			
Leu Arg Glu Gly Tyr Ile Ile Pro Leu Gln Gly Pro Ser Leu Thr Thr				
820	825	830		
acg gag tcc cga aag cag ccc atg gct ctg gct gtg gca tta aca gca	2662			

Thr Glu Ser Arg Lys Gln Pro Met Ala Leu Ala Val Ala Leu Thr Ala
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 855 860 865
 gca gtt ctg gag cat ggg gcc tac aca ctg gtc acc ttc tca gcc aag 2758
 Ala Val Leu Glu His Gly Ala Tyr Thr Leu Val Thr Phe Ser Ala Lys
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 Asn Asn Thr Ile Val Asn Lys Leu Val Arg Val Thr Lys Glu Gly Ala
 885 890 895
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 acc cag gtc ctt tcc aac ggc atc cct gtc tcc aat ttc acc tac agc 2902
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 Pro Asp Asn Lys Ser Leu Ala Ile Pro Val Ser Leu Leu Met Gly Glu
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 Leu Phe Gln Ile Ser Trp Ser
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<211> 953

<212> PRT

<213> Mus musculus

<400> 422

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      20              25              30
Arg Glu Leu Met Leu Leu Pro Gln Asp Leu His Glu Ser Ser Ser Gly
      35              40              45
Leu Trp Lys Thr Tyr Arg Pro His His Gln Glu Gly Tyr Glu Pro Gly
      50              55              60
Pro Leu His Ile Gln Glu Gln Thr Glu Gln Pro Lys Glu Ala Pro Thr
      65              70              75              80
Gln Cys Asp Val Pro Pro Ser Ser Arg Phe Asp Cys Ala Pro Asp Lys
      85              90              95
Gly Ile Ser Gln Glu Gln Cys Glu Ala Arg Gly Cys Cys Tyr Val Pro
      100              105              110
Ala Gly Gln Val Leu Lys Glu Pro Gln Ile Gly Gln Pro Trp Cys Phe
      115              120              125
Phe Pro Pro Ser Tyr Pro Ser Tyr Arg Leu Glu Asn Leu Ser Ser Thr
      130              135              140
Glu Ser Gly Tyr Thr Ala Thr Leu Thr Arg Thr Ser Pro Thr Phe Phe
      145              150              155              160
Pro Lys Asp Val Leu Thr Leu Gln Leu Glu Val Leu Met Glu Thr Asp
      165              170              175

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Ser Arg Leu His Phe Lys Ile Lys Asp Pro Ala Ser Lys Arg Tyr Glu
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 Val Pro Leu Glu Thr Pro Arg Val Leu Ser Gln Ala Pro Ser Pro Leu
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 Tyr Ser Val Glu Phe Ser Glu Glu Pro Phe Gly Val Ile Val Arg Arg
 210 215 220
 Lys Leu Gly Gly Arg Val Leu Leu Asn Thr Thr Val Ala Pro Leu Phe
 225 230 235 240
 Phe Ala Asp Gln Phe Leu Gln Leu Ser Thr Ser Leu Pro Ala Gln His
 245 250 255
 Ile Thr Gly Leu Gly Glu His Leu Ser Pro Leu Met Leu Ser Thr Asp
 260 265 270
 Trp Ala Arg Ile Thr Leu Trp Asn Arg Asp Thr Pro Pro Ser Gln Gly
 275 280 285
 Thr Asn Leu Tyr Gly Ser His Pro Phe Tyr Leu Ala Leu Glu Asp Gly
 290 295 300
 Gly Leu Ala His Gly Val Phe Leu Leu Asn Ser Asn Ala Met Asp Val
 305 310 315 320
 Ile Leu Gln Pro Ser Pro Ala Leu Thr Trp Arg Ser Thr Gly Gly Ile
 325 330 335
 Leu Asp Val Tyr Val Phe Leu Gly Pro Glu Pro Lys Ser Val Val Gln
 340 345 350
 Gln Tyr Leu Asp Val Val Gly Tyr Pro Phe Met Pro Pro Tyr Trp Gly
 355 360 365
 Leu Gly Phe His Leu Cys Arg Trp Gly Tyr Ser Ser Thr Ala Ile Val
 370 375 380
 Arg Gln Val Val Glu Asn Met Thr Arg Thr His Phe Pro Leu Asp Val
 385 390 395 400
 Gln Trp Asn Asp Leu Asp Tyr Met Asp Ala Arg Arg Asp Phe Thr Phe

405 410 415
Asn Gln Asp Ser Phe Ala Asp Phe Pro Asp Met Val Arg Asp Val His
420 425 430
Gln Gly Gly Arg Arg Tyr Met Met Ile Val Asp Pro Ala Ile Ser Ser
435 440 445
Ala Gly Pro Ala Gly Ser Tyr Arg Pro Tyr Asp Glu Gly Leu Arg Arg
450 455 460
Gly Val Phe Ile Thr Asn Glu Thr Gly Gln Pro Leu Ile Gly Lys Val
465 470 475 480
Cys Pro Gly Thr Thr Ala Phe Pro Asp Phe Thr Asn Pro Glu Thr Leu
485 490 495
Asp Trp Trp Gln Asp Met Val Ser Glu Phe His Xaa Gln Val Pro Phe
500 505 510
Asp Gly Met Trp Leu Asp Met Asn Glu Pro Ser Asn Phe Val Arg Gly
515 520 525
Ser Gln Gln Gly Cys Pro Asn Asn Glu Leu Glu Asn Pro Pro Tyr Xaa
530 535 540
Pro Gly Val Val Gly Gly Ile Leu Gln Ala Ala Thr Ile Cys Ala Ser
545 550 555 560
Ser His Gln Phe Leu Ser Thr His Tyr Asn Leu His Asn Leu Tyr Gly
565 570 575
Leu Thr Glu Ala Ile Ala Ser Ser Arg Ala Leu Val Lys Thr Arg Gly
580 585 590
Thr Arg Pro Phe Val Ile Ser Arg Ser Thr Phe Ser Gly His Gly Arg
595 600 605
Tyr Ala Gly His Trp Thr Glu Asp Val Arg Thr Ser Trp Glu His Leu
610 615 620
Ala Tyr Ser Val Pro Asp Ile Leu Gln Phe Asn Leu Leu Gly Val Pro
625 630 635 640

Leu Val Gly Ala Asp Ile Cys Gly Phe Ile Gly Asp Thr Ser Glu Glu
 645 650 655
 Leu Cys Val Arg Trp Thr Gln Leu Gly Ala Phe Tyr Pro Phe Met Arg
 660 665 670
 Asn His Asn Asp Leu Asn Ser Val Pro Gln Glu Pro Tyr Arg Phe Ser
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 690 695 700
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 Asp Thr Val Ala Arg Pro Leu Phe Leu Glu Phe Arg Glu Asp Pro Ser
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 Lys Gly Thr Trp Tyr Asn Met Gln Val Val Ser Val Asp Ser Leu Gly
 770 775 780
 Thr Leu Pro Ser Pro Ser Ser Ala Ser Ser Phe Arg Ser Ala Val Gln
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 Ser Lys Gly Gln Trp Leu Thr Leu Glu Ala Pro Leu Asp Thr Ile Asn
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 Val His Leu Arg Glu Gly Tyr Ile Ile Pro Leu Gln Gly Pro Ser Leu
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 Thr Ala Ser Gly Glu Ala Asp Gly Glu Leu Phe Trp Asp Asp Gly Glu
 850 855 860
 Ser Leu Ala Val Leu Glu His Gly Ala Tyr Thr Leu Val Thr Phe Ser

865 870 875 880
 Ala Lys Asn Asn Thr Ile Val Asn Lys Leu Val Arg Val Thr Lys Glu
 885 890 895
 Gly Ala Glu Leu Gln Leu Lys Glu Val Thr Val Leu Gly Val Ala Thr
 900 905 910
 Ala Pro Thr Gln Val Leu Ser Asn Gly Ile Pro Val Ser Asn Phe Thr
 915 920 925
 Tyr Ser Pro Asp Asn Lys Ser Leu Ala Ile Pro Val Ser Leu Leu Met
 930 935 940
 Gly Glu Leu Phe Gln Ile Ser Trp Ser
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<211> 566

<212> DNA

<213> Mus musculus

<400> 423

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<210> 424

<211> 322

<212> DNA

<213> Mus musculus

<400> 424

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ggattagatg gtcctggaaa aacaacaatt ttgtacaggt tacaggttgg agaagttggt 240
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<213> Mus musculus

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<221> CDS

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<400> 425

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Leu Leu Val Gln Pro Thr Lys Arg Pro Glu Gly Arg Thr Tyr Ala Asp
                                     10             15             20

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tat gag tct gtg aat gag tgc atg gaa ggt gtt tgt aaa atg tat gaa 152
 Tyr Glu Ser Val Asn Glu Cys Met Glu Gly Val Cys Lys Met Tyr Glu
 25 30 35
 gaa cat ctg aag agg atg aat ccc aac agc cct tcc atc aca tac gat 200
 Glu His Leu Lys Arg Met Asn Pro Asn Ser Pro Ser Ile Thr Tyr Asp
 40 45 50
 atc agc cag ttg ttt gat ttt att gac gat ctg gca gac ctc agc tgt 248
 Ile Ser Gln Leu Phe Asp Phe Ile Asp Asp Leu Ala Asp Leu Ser Cys
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 Leu Val Tyr Arg Ala Asp Thr Gln Thr Tyr Gln Pro Tyr Asn Lys Asp
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 Trp Ile Lys Glu Lys Ile Tyr Val Leu Leu Arg Arg Gln Ala Gln Gln
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 Ala Gly Lys
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<210> 426

<211> 104

<212> PRT

<213> Mus musculus

<400> 426

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 35 40 45
 Ser Ile Thr Tyr Asp Ile Ser Gln Leu Phe Asp Phe Ile Asp Asp Leu
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 Ala Asp Leu Ser Cys Leu Val Tyr Arg Ala Asp Thr Gln Thr Tyr Gln
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<210> 427

<211> 8476

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (4077).. (8213)

<400> 427

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Met

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5

10

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20

25

30

aac tgg aag gac agt tcc tcc agc aga aga gag tca gtg atc cag gag 4223
 Asn Trp Lys Asp Ser Ser Ser Ser Arg Arg Glu Ser Val Ile Gln Glu

35

40

45

agg ggt tat gaa ggg agc gca ttt agg ggc ggc ttc cgg ttc aac gca 4271
 Arg Gly Tyr Glu Gly Ser Ala Phe Arg Gly Gly Phe Arg Phe Asn Ala

50

55

60

65

gac ctg gct tcc aga agc aga gct cta gaa agg aag agg cgt tac cac 4319
 Asp Leu Ala Ser Arg Ser Arg Ala Leu Glu Arg Lys Arg Arg Tyr His

70

75

80

ttt gat tct gat gag cgg ggt tgc ggc cat gag cat aaa agc tgt gtg 4367
 Phe Asp Ser Asp Glu Arg Gly Ser Gly His Glu His Lys Ser Cys Val

85

90

95

agg aag aag cct ttt gag tgt ggt gct gag atg aga cag gct atg agc 4415

1119/2644

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Pro Pro Glu Asn Lys Asp Asp Asp Lys Pro Phe Thr Ile Ser Val Asn			
435	440	445	
cct aat gac aag ctg aaa ttc ccc atc atg gaa aat ggc tcc cag ggc	5471		
Pro Asn Asp Lys Leu Lys Phe Pro Ile Met Glu Asn Gly Ser Gln Gly			
450	455	460	465
aaa tcc tat gag agg tct gtt att cat agc ttg gcg tcg gca gaa gct	5519		
Lys Ser Tyr Glu Arg Ser Val Ile His Ser Leu Ala Ser Ala Glu Ala			
470	475	480	
cag aag agt cat ggt gga ctg ggg ttc agt aaa cca gac cag tgg cag	5567		
Gln Lys Ser His Gly Gly Leu Gly Phe Ser Lys Pro Asp Gln Trp Gln			
485	490	495	
agt cta gca ccc aga gct caa gca gat tta cta ccc cag agc aca ctc	5615		
Ser Leu Ala Pro Arg Ala Gln Ala Asp Leu Leu Pro Gln Ser Thr Leu			
500	505	510	
tct gga ggc aac acc tat aaa gga aaa gaa tac aag gac tct atc atc	5663		
Ser Gly Gly Asn Thr Tyr Lys Gly Lys Glu Tyr Lys Asp Ser Ile Ile			
515	520	525	
cat agc ttg cca gct cct cga cct ctg aaa cgt ata gag caa atg acc	5711		
His Ser Leu Pro Ala Pro Arg Pro Leu Lys Arg Ile Glu Gln Met Thr			
530	535	540	545
ata ttc aat gig atg agg ggg gag aat cct cca ttt ata tcc cag ata	5759		
Ile Phe Asn Val Met Arg Gly Glu Asn Pro Pro Phe Ile Ser Gln Ile			
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tta tta ata agg gaa gga aga ttc ctg cca gag aag atg ctt atg aag	5807		

Leu Leu Ile Arg Glu Gly Arg Phe Leu Pro Glu Lys Met Leu Met Lys
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 gaa gta gca gca gca act acc aca cac caa atg tat ccc gtg ctg agc 5855
 Glu Val Ala Ala Ala Thr Thr Thr His Gln Met Tyr Pro Val Leu Ser
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 ctc caa gtc ttt ctg gag agt ccc atg act cta agc agg atg tca cgt 5903
 Leu Gln Val Phe Leu Glu Ser Pro Met Thr Leu Ser Arg Met Ser Arg
 595 600 605
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 Phe Gln Phe Pro Ala Gln Val Phe Val Asn Thr Arg Lys Leu Val Pro
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 aaa aga agt aca ttg agc cca gga aca acg aga cct ctg tta tcc act 5999
 Lys Arg Ser Thr Leu Ser Pro Gly Thr Thr Arg Pro Leu Leu Ser Thr
 630 635 640
 ccc tac ctt ttg gtg agt tgc ttg cag gtc acc gta gca aag ttc ttt 6047
 Pro Tyr Leu Leu Val Ser Cys Leu Gln Val Thr Val Ala Lys Phe Phe
 645 650 655
 gag tgt cag gaa tgc agg gag gcc ttt gct cgt agg tct gag ctc att 6095
 Glu Cys Gln Glu Cys Arg Glu Ala Phe Ala Arg Arg Ser Glu Leu Ile
 660 665 670
 gag cac cag aag att cat gat aga gaa gac ctt ctg gag ccg act tat 6143
 Glu His Gln Lys Ile His Asp Arg Glu Asp Leu Leu Glu Pro Thr Tyr
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 gag cgc tct gtc atc cgc agc ctt gcg ccc agt gac cct cag acc agt 6191
 Glu Arg Ser Val Ile Arg Ser Leu Ala Pro Ser Asp Pro Gln Thr Ser
 690 695 700 705
 tat gcc caa gaa cgt ttc atc caa gaa caa gtg cgt aaa ttc aga gcg 6239
 Tyr Ala Gln Glu Arg Phe Ile Gln Glu Gln Val Arg Lys Phe Arg Ala
 710 715 720

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Phe Gly Gln Arg Ser Thr Thr Ser Asn Asn Leu Ser Val Gln Lys Ile
      725              730              735

tat gcc caa gag aca ttt aat gcc gag gag ccc cat gat aaa gaa act      6335
Tyr Ala Gln Glu Thr Phe Asn Ala Glu Glu Pro His Asp Lys Glu Thr
      740              745              750

cat ggt caa aaa att cat gac aaa gag cca tat ggt aag gag ccc agt      6383
His Gly Gln Lys Ile His Asp Lys Glu Pro Tyr Gly Lys Glu Pro Ser
      755              760              765

ggc aag gag ccc cat ggt gat gag ccc cag gac aaa gaa ccc ctt gat      6431
Gly Lys Glu Pro His Gly Asp Glu Pro Gln Asp Lys Glu Pro Leu Asp
770              775              780              785

cag gag atg cgc agt gaa gag ccc cat gat gat aag ccc cat ggc cag      6479
Gln Glu Met Arg Ser Glu Glu Pro His Asp Asp Lys Pro His Gly Gln
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gag ccc cat gat gat atg aga ccc cat ggc cag gag ccc cat gat gat      6527
Glu Pro His Asp Asp Met Arg Pro His Gly Gln Glu Pro His Asp Asp
      805              810              815

gag ccc cat ggc cag gag ccc cac ggt gat gag ccc cat ggc cag gag      6575
Glu Pro His Gly Gln Glu Pro His Gly Asp Glu Pro His Gly Gln Glu
      820              825              830

ccc cac ggt gat gag ccc cat gac aag gaa ccc att gat cag gag atg      6623
Pro His Gly Asp Glu Pro His Asp Lys Glu Pro Ile Asp Gln Glu Met
      835              840              845

cgc agt gaa gag ccc cac agt gaa gag tct cat ggt gat gag ccc cat      6671
Arg Ser Glu Glu Pro His Ser Glu Glu Ser His Gly Asp Glu Pro His
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ggt gaa gag tcc cat ggc cag gag aaa gtt gaa gat gct acc att cag      6719
Gly Glu Glu Ser His Gly Gln Glu Lys Val Glu Asp Ala Thr Ile Gln

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870	875	880	
gcc tca gtt tct gaa gag cat cag aaa gat gac gct ggt gat gca atc			6767
Ala Ser Val Ser Glu Glu His Gln Lys Asp Asp Ala Gly Asp Ala Ile			
885	890	895	
tat gaa tgc cag gac tgt ggg ctg ggc ttt act gat ctc aat gac ctc			6815
Tyr Glu Cys Gln Asp Cys Gly Leu Gly Phe Thr Asp Leu Asn Asp Leu			
900	905	910	
aca agc cac cag gac acc cat agc agg aag gct ctg gtt gac agt cgt			6863
Thr Ser His Gln Asp Thr His Ser Arg Lys Ala Leu Val Asp Ser Arg			
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gga tat gca cat tct gaa gtt cat gcc cac tcc gtc agc gaa ttt gag			6911
Gly Tyr Ala His Ser Glu Val His Ala His Ser Val Ser Glu Phe Glu			
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aaa aaa tgc tct gga gag aaa cta tat gaa tgt cca aaa tgt ggg gag			6959
Lys Lys Cys Ser Gly Glu Lys Leu Tyr Glu Cys Pro Lys Cys Gly Glu			
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tct ttc att cac agc tcg tta ctt ttc gag cac cag aga gtt cac gaa			7007
Ser Phe Ile His Ser Ser Leu Leu Phe Glu His Gln Arg Val His Glu			
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caa gac cag ctg tat tcc gta aag gcc tgt gat gac gct ttc atc gct			7055
Gln Asp Gln Leu Tyr Ser Val Lys Ala Cys Asp Asp Ala Phe Ile Ala			
980	985	990	
ctg ttg ccc gtg aga cca agg aga aat tgc act gtt gaa agg aat cct			7103
Leu Leu Pro Val Arg Pro Arg Arg Asn Cys Thr Val Glu Arg Asn Pro			
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gcc gtt tct ggg tca gcc att cga tgc cgt cag tgt gga caa ggc ttc			7151
Ala Val Ser Gly Ser Ala Ile Arg Cys Arg Gln Cys Gly Gln Gly Phe			
1010	1015	1020	1025
att cac agt tct gcc cta aat gag cac atg aga cag cac aga gat aat			7199

Ile His Ser Ser Ala Leu Asn Glu His Met Arg Gln His Arg Asp Asn
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 gaa ata atg gaa cag agt gag ctt tca gat gag att ttc att caa ggc 7247
 Glu Ile Met Glu Gln Ser Glu Leu Ser Asp Glu Ile Phe Ile Gln Gly
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 Leu Ala Leu Thr Glu Tyr Gln Gly Ser Glu Thr Glu Glu Lys Leu Phe
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 Glu Cys Thr Ile Cys Gly Glu Cys Phe Phe Thr Ala Lys Gln Leu Gly
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 tcc tac acc cat gcc tcc ttt ctc acc gag ccc ctc agg aag cac atc 7439
 Ser Tyr Thr His Ala Ser Phe Leu Thr Glu Pro Leu Arg Lys His Ile
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 cca ctg tac gaa tgc aaa gat tgc ggc cag tcc ttc cta gac gac act 7487
 Pro Leu Tyr Glu Cys Lys Asp Cys Gly Gln Ser Phe Leu Asp Asp Thr
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 Val Ile Ala Glu Arg Met Val Phe His Pro Glu Arg Glu Gly Gly Ser
 1140 1145 1150
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 Glu Ile Val Ala Ala Thr Ala Gln Glu Val Glu Ala Asn Val Leu Ile
 1155 1160 1165
 cca caa gaa gta ctg cga atc cag ggg tca aat gca gaa gct gct gag 7631
 Pro Gln Glu Val Leu Arg Ile Gln Gly Ser Asn Ala Glu Ala Ala Glu
 1170 1175 1180 1185

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 Pro Glu Val Glu Ala Ala Glu Pro Glu Val Glu Ala Ala Glu Pro Glu
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 gtg gag gct gca gag cct aat gga gag gct gaa ggg cca gat gga gaa 7727
 Val Glu Ala Ala Glu Pro Asn Gly Glu Ala Glu Gly Pro Asp Gly Glu
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 gct gct gag cct gat ggc gag gct gag cag ccc aat gga gag gct gaa 7775
 Ala Ala Glu Pro Asp Gly Glu Ala Glu Gln Pro Asn Gly Glu Ala Glu
 1220 1225 1230
 cag caa acg gtg atg ctg act gag cca gac gga gcc ggg atc gaa gac 7823
 Gln Gln Thr Val Met Leu Thr Glu Pro Asp Gly Ala Gly Ile Glu Asp
 1235 1240 1245
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 Pro Glu Glu Arg Ala Asp Glu Pro Glu Glu Asp Val Glu Glu Pro Glu
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 1270 1275 1280
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 Glu Gly Glu Asp Gln Glu Ile Glu Val Glu Glu Pro Tyr Tyr Asn Cys
 1285 1290 1295
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 1300 1305 1310
 ctg aaa agt cac gcc agt gtg atc atc ttc gag ccg gcc aat gct cct 8063
 Leu Lys Ser His Ala Ser Val Ile Ile Phe Glu Pro Ala Asn Ala Pro
 1315 1320 1325
 gga gag tgc tct ggc tac att gaa cgg gcc agc acc agt gca ggt ggt 8111
 Gly Glu Cys Ser Gly Tyr Ile Glu Arg Ala Ser Thr Ser Ala Gly Gly

1330	1335	1340	1345	
gcg gag cag gca gac gac aag tac ttc aaa tgt gat gig tgc ggg caa	8159			
Ala Glu Gln Ala Asp Asp Lys Tyr Phe Lys Cys Asp Val Cys Gly Gln				
1350	1355	1360		
ctc ttc aac gac cgc ctc tcc ctt gcc aga cac cag aat tct cac act	8207			
Leu Phe Asn Asp Arg Leu Ser Leu Ala Arg His Gln Asn Ser His Thr				
1365	1370	1375		
ggt tga gtaaccaggc tgaagaaaag aagagcaaag ccaaaccctc ttcccagaac	8263			
Gly				
cagaccctta ataaatcaca aagagagcct aaaccaaccc ataatgtcta taagaaattc	8323			
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<210> 428

<211> 1378

<212> PRT

<213> Mus musculus

<400> 428

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Asp Asn Trp Lys Asp Ser Ser Ser Ser Arg Arg Glu Ser Val Ile Gln
35 40 45
Glu Arg Gly Tyr Glu Gly Ser Ala Phe Arg Gly Gly Phe Arg Phe Asn
50 55 60
Ala Asp Leu Ala Ser Arg Ser Arg Ala Leu Glu Arg Lys Arg Arg Tyr

65	70	75	80
His Phe Asp Ser Asp Glu Arg Gly Ser Gly His Glu His Lys Ser Cys			
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Val Arg Lys Lys Pro Phe Glu Cys Gly Ala Glu Met Arg Gln Ala Met			
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Ser Met Gly Asn Leu Asn Ser Pro Ser Phe Ser Glu Ser Gln Ser Ile			
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Asp Phe Gly Ala Asn Pro Tyr Val Cys Asp Glu Cys Gly Arg Gln Phe			
	130	135	140
Ser Val Ile Ser Glu Phe Val Glu His Gln Ile Met His Thr Arg Glu			
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Asn Leu Tyr Glu Tyr Gly Glu Ser Phe Ile His Ser Val Ala Val Asn			
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Glu Val Gln Lys Gly Gln Gly Gly Gly Lys Arg Phe Glu Cys Lys Glu			
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Cys Gly Glu Thr Phe Ser Arg Ser Ala Ala Leu Ala Glu His Arg Gln			
	195	200	205
Ile His Ala Arg Arg Tyr Leu Ala Glu Cys Arg Asp Gln Glu Asp Glu			
	210	215	220
Glu Thr Ile Met Pro Ser Pro Thr Phe Ser Glu Leu Gln Lys Met Tyr			
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Gly Lys Asp Lys Phe Tyr Glu Cys Lys Val Cys Lys Glu Thr Phe Leu			
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His Ser Ser Ala Leu Ile Glu His Gln Lys Ile His Gly Arg Gly Asn			
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Ser Asp Asp Arg Asp Asn Glu Arg Glu Arg Glu Arg Asp Arg Leu Arg			
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Ala Arg Ala Arg Glu Gln Arg Glu Arg Glu Arg Glu Arg Glu Arg Glu			
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Arg Glu Leu Gly Glu Pro Phe Leu Thr Cys Pro Asn Phe Asn Glu Phe
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 Arg Lys Met Tyr Arg Lys Asp Lys Ile Tyr Glu Cys Lys Val Cys Gly
 325 330 335
 Glu Ser Phe Leu His Leu Ser Ser Leu Arg Glu His Gln Lys Ile His
 340 345 350
 Thr Arg Gly Asn Pro Phe Glu Asn Lys Ser Arg Met Cys Glu Glu Thr
 355 360 365
 Phe Val Pro Ser Gln Ser Leu Arg Gln Lys Thr Tyr Arg Glu Lys Leu
 370 375 380
 Phe Asp Phe Asn Asn Ala Arg Asp Ala Leu Met Gly Asn Ser Asp Ser
 385 390 395 400
 Ser Glu His Gln Lys Asn Arg Ser Arg Arg Asn Phe Phe Glu Gly Arg
 405 410 415
 Gly Phe Glu Lys Pro Phe Val Glu Ser Gln Lys Ser His Thr Ile Thr
 420 425 430
 Arg Pro Pro Glu Asn Lys Asp Asp Asp Lys Pro Phe Thr Ile Ser Val
 435 440 445
 Asn Pro Asn Asp Lys Leu Lys Phe Pro Ile Met Glu Asn Gly Ser Gln
 450 455 460
 Gly Lys Ser Tyr Glu Arg Ser Val Ile His Ser Leu Ala Ser Ala Glu
 465 470 475 480
 Ala Gln Lys Ser His Gly Gly Leu Gly Phe Ser Lys Pro Asp Gln Trp
 485 490 495
 Gln Ser Leu Ala Pro Arg Ala Gln Ala Asp Leu Leu Pro Gln Ser Thr
 500 505 510
 Leu Ser Gly Gly Asn Thr Tyr Lys Gly Lys Glu Tyr Lys Asp Ser Ile
 515 520 525
 Ile His Ser Leu Pro Ala Pro Arg Pro Leu Lys Arg Ile Glu Gln Met

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Thr Ile Phe Asn Val Met Arg Gly Glu Asn Pro Pro Phe Ile Ser Gln			
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Ile Leu Leu Ile Arg Glu Gly Arg Phe Leu Pro Glu Lys Met Leu Met			
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Lys Glu Val Ala Ala Ala Thr Thr Thr His Gln Met Tyr Pro Val Leu			
	580	585	590
Ser Leu Gln Val Phe Leu Glu Ser Pro Met Thr Leu Ser Arg Met Ser			
	595	600	605
Arg Phe Gln Phe Pro Ala Gln Val Phe Val Asn Thr Arg Lys Leu Val			
	610	615	620
Pro Lys Arg Ser Thr Leu Ser Pro Gly Thr Thr Arg Pro Leu Leu Ser			
625	630	635	640
Thr Pro Tyr Leu Leu Val Ser Cys Leu Gln Val Thr Val Ala Lys Phe			
	645	650	655
Phe Glu Cys Gln Glu Cys Arg Glu Ala Phe Ala Arg Arg Ser Glu Leu			
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Ile Glu His Gln Lys Ile His Asp Arg Glu Asp Leu Leu Glu Pro Thr			
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Tyr Glu Arg Ser Val Ile Arg Ser Leu Ala Pro Ser Asp Pro Gln Thr			
	690	695	700
Ser Tyr Ala Gln Glu Arg Phe Ile Gln Glu Gln Val Arg Lys Phe Arg			
705	710	715	720
Ala Phe Gly Gln Arg Ser Thr Thr Ser Asn Asn Leu Ser Val Gln Lys			
	725	730	735
Ile Tyr Ala Gln Glu Thr Phe Asn Ala Glu Glu Pro His Asp Lys Glu			
	740	745	750
Thr His Gly Gln Lys Ile His Asp Lys Glu Pro Tyr Gly Lys Glu Pro			
	755	760	765

Ser Gly Lys Glu Pro His Gly Asp Glu Pro Gln Asp Lys Glu Pro Leu
 770 775 780
 Asp Gln Glu Met Arg Ser Glu Glu Pro His Asp Asp Lys Pro His Gly
 785 790 795 800
 Gln Glu Pro His Asp Asp Met Arg Pro His Gly Gln Glu Pro His Asp
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 Asp Glu Pro His Gly Gln Glu Pro His Gly Asp Glu Pro His Gly Gln
 820 825 830
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 945 950 955 960
 Glu Ser Phe Ile His Ser Ser Leu Leu Phe Glu His Gln Arg Val His
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995	1000	1005
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1010	1015	1020
Phe Ile His Ser Ser Ala Leu Asn Glu His Met Arg Gln His Arg Asp		
025	1030	1035
		1040
Asn Glu Ile Met Glu Gln Ser Glu Leu Ser Asp Glu Ile Phe Ile Gln		
1045	1050	1055
Gly Leu Ala Leu Thr Glu Tyr Gln Gly Ser Glu Thr Glu Glu Lys Leu		
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Phe Glu Cys Thr Ile Cys Gly Glu Cys Phe Phe Thr Ala Lys Gln Leu		
1075	1080	1085
Gly Asp His His Thr Lys Val His Lys Asp Glu Pro Tyr Glu Tyr Gly		
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Pro Ser Tyr Thr His Ala Ser Phe Leu Thr Glu Pro Leu Arg Lys His		
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1125	1130	1135
Thr Val Ile Ala Glu Arg Met Val Phe His Pro Glu Arg Glu Gly Gly		
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Ile Pro Gln Glu Val Leu Arg Ile Gln Gly Ser Asn Ala Glu Ala Ala		
1170	1175	1180
Glu Pro Glu Val Glu Ala Ala Glu Pro Glu Val Glu Ala Ala Glu Pro		
1185	1190	1195
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Glu Val Glu Ala Ala Glu Pro Asn Gly Glu Ala Glu Gly Pro Asp Gly		
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Glu Ala Ala Glu Pro Asp Gly Glu Ala Glu Gln Pro Asn Gly Glu Ala		
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 Cys His Glu Cys Ala Glu Thr Phe Ala Ser Ser Ser Ala Phe Gly Glu
 1300 1305 1310
 His Leu Lys Ser His Ala Ser Val Ile Ile Phe Glu Pro Ala Asn Ala
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 Pro Gly Glu Cys Ser Gly Tyr Ile Glu Arg Ala Ser Thr Ser Ala Gly
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 Gly Ala Glu Gln Ala Asp Asp Lys Tyr Phe Lys Cys Asp Val Cys Gly
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<211> 555

<212> DNA

<213> Mus musculus

<400> 429

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<213> Mus musculus

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<211> 3272

<212> DNA

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<222> (952).. (2664)

<400> 431

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 Tyr Ser Pro Ile Cys Leu Thr Gln Asp Glu Phe His Pro Phe Ile Glu

5

10

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 Ala Leu Leu Pro His Val Arg Ala Ile Ala Tyr Thr Trp Phe Asn Leu

20

25

30

cag gct cga aaa cgc aag tac ttt aaa aag cat gag aaa cga atg tcg 1101

Gln Ala Arg Lys Arg Lys Tyr Phe Lys Lys His Glu Lys Arg Met Ser
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 gaa atc aag cag aag tgg gca tcc agg ctc ctg gcc aaa ctg cgc aaa 1197
 Glu Ile Lys Gln Lys Trp Ala Ser Arg Leu Leu Ala Lys Leu Arg Lys
 70 75 80
 gat atc cgc cag gag tac cgg gag gac ttt gtg ctt acc gtg act ggc 1245
 Asp Ile Arg Gln Glu Tyr Arg Glu Asp Phe Val Leu Thr Val Thr Gly
 85 90 95
 aag aag cac ccg tgc tgt gtc tta tcc aat cca gac cag aag ggt aag 1293
 Lys Lys His Pro Cys Cys Val Leu Ser Asn Pro Asp Gln Lys Gly Lys
 100 105 110
 att agg agg atc gac tgc ctg cga cag gca gac aaa gtc tgg cgt ctg 1341
 Ile Arg Arg Ile Asp Cys Leu Arg Gln Ala Asp Lys Val Trp Arg Leu
 115 120 125 130
 ggt cta gtc atg gtg atc ctg ttc aaa ggc atc cct ttg gag agt acg 1389
 Gly Leu Val Met Val Ile Leu Phe Lys Gly Ile Pro Leu Glu Ser Thr
 135 140 145
 gat gga gag cga ctc atg aag tcc ccg cac tgc aca aac cca gca ctt 1437
 Asp Gly Glu Arg Leu Met Lys Ser Pro His Cys Thr Asn Pro Ala Leu
 150 155 160
 tgt gtt cag cca cac cac atc aca gta tca gtt aag gag ctt gac ttg 1485
 Cys Val Gln Pro His His Ile Thr Val Ser Val Lys Glu Leu Asp Leu
 165 170 175
 ttt ttg gca tac tac gtg cag gag caa gat tct gga caa tca gga agt 1533
 Phe Leu Ala Tyr Tyr Val Gln Glu Gln Asp Ser Gly Gln Ser Gly Ser
 180 185 190

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cca agc cac agt gat cct gcc aag aat cct cca ggg tac ctc gag gac 1581
Pro Ser His Ser Asp Pro Ala Lys Asn Pro Pro Gly Tyr Leu Glu Asp
195          200          205          210
agc ttt gta aaa tcc gga gtc ttc aat gta tca gag ctt gtg aga gta 1629
Ser Phe Val Lys Ser Gly Val Phe Asn Val Ser Glu Leu Val Arg Val
          215          220          225
tcc aga aca ccc ata acc cag gga act gga gtc aac ttc cca atc gga 1677
Ser Arg Thr Pro Ile Thr Gln Gly Thr Gly Val Asn Phe Pro Ile Gly
          230          235          240
gaa att ccc agc caa cca tac tat cat gac atg aac tct ggt gtg aac 1725
Glu Ile Pro Ser Gln Pro Tyr Tyr His Asp Met Asn Ser Gly Val Asn
          245          250          255
ctg cag agg tcg ctg tct tct cca ccg agc agc aaa aga ccc aaa act 1773
Leu Gln Arg Ser Leu Ser Ser Pro Pro Ser Ser Lys Arg Pro Lys Thr
          260          265          270
ata tct ata gat gaa aat atg gag cca agt cct aca gga gac ttt tac 1821
Ile Ser Ile Asp Glu Asn Met Glu Pro Ser Pro Thr Gly Asp Phe Tyr
275          280          285          290
ccc tct cca aat tca cca gct gct gga agt cga aca tgg cat gaa cga 1869
Pro Ser Pro Asn Ser Pro Ala Ala Gly Ser Arg Thr Trp His Glu Arg
          295          300          305
gat caa gat atg tct tct cca act aca atg aag aag cct gag aag cca 1917
Asp Gln Asp Met Ser Ser Pro Thr Thr Met Lys Lys Pro Glu Lys Pro
          310          315          320
ctg ttt agc tct aca tct cca cag gat tct tcc cca aga ttg agc act 1965
Leu Phe Ser Ser Thr Ser Pro Gln Asp Ser Ser Pro Arg Leu Ser Thr
          325          330          335
ttc ccc cag cac cat cat ccc gga ata cct gga gtc gcg cac agt gtc 2013
Phe Pro Gln His His His Pro Gly Ile Pro Gly Val Ala His Ser Val

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340	345	350	
atc tca act cga act cca cct ccg ccc tca ccg ttg cca ttt ccg acg	2061		
Ile Ser Thr Arg Thr Pro Pro Pro Pro Ser Pro Leu Pro Phe Pro Thr			
355	360	365	370
caa gct atc ctt cct ccg gca cct tcc agc tac ttc tct cat cca aca	2109		
Gln Ala Ile Leu Pro Pro Ala Pro Ser Ser Tyr Phe Ser His Pro Thr			
375	380	385	
atc aga tat cct cct cac ctg aat cct cag gat act ctg aag aac tac	2157		
Ile Arg Tyr Pro Pro His Leu Asn Pro Gln Asp Thr Leu Lys Asn Tyr			
390	395	400	
gta cct tct tat gac cca tcc agt cct caa acg agc cag cct aac agc	2205		
Val Pro Ser Tyr Asp Pro Ser Ser Pro Gln Thr Ser Gln Pro Asn Ser			
405	410	415	
agt ggt caa gta gta ggg aaa gtg cct ggc cat ttc aca cct gtc ttg	2253		
Ser Gly Gln Val Val Gly Lys Val Pro Gly His Phe Thr Pro Val Leu			
420	425	430	
gca ccc tct ccc cat ccc agt gca gtg cga cct gtg acc ctg acc atg	2301		
Ala Pro Ser Pro His Pro Ser Ala Val Arg Pro Val Thr Leu Thr Met			
435	440	445	450
aca gat act aaa ccc atc act aca tcc act gaa ggt gag gca gct tca	2349		
Thr Asp Thr Lys Pro Ile Thr Thr Ser Thr Glu Gly Glu Ala Ala Ser			
455	460	465	
cct aca gca acc acc tac aca gcc tca ggc aca tct caa gcc aat cga	2397		
Pro Thr Ala Thr Thr Tyr Thr Ala Ser Gly Thr Ser Gln Ala Asn Arg			
470	475	480	
tat gtg gga cta agc cca aga gac cca tcc ttc ctg cat cag caa cag	2445		
Tyr Val Gly Leu Ser Pro Arg Asp Pro Ser Phe Leu His Gln Gln Gln			
485	490	495	
ctg agg att tgt gac tgg acc atg aat caa aac ggc agg cat tta tac	2493		

Leu Arg Ile Cys Asp Trp Thr Met Asn Gln Asn Gly Arg His Leu Tyr
 500 505 510
 ccc agt acc agt gag gat aca ttg gga att act tgg caa agt cct ggt 2541
 Pro Ser Thr Ser Glu Asp Thr Leu Gly Ile Thr Trp Gln Ser Pro Gly
 515 520 525 530
 acc tgg gct agc ttg gtt cct ttt caa gtg tca aat agg aca ccc atc 2589
 Thr Trp Ala Ser Leu Val Pro Phe Gln Val Ser Asn Arg Thr Pro Ile
 535 540 545
 tta ccg gca aat gtc caa aat tat ggt ttg aac ata att gga gag cct 2637
 Leu Pro Ala Asn Val Gln Asn Tyr Gly Leu Asn Ile Ile Gly Glu Pro
 550 555 560
 ttc ctt caa gcg gag aca agc aac tga ggggaaagaa ccacaacct 2684
 Phe Leu Gln Ala Glu Thr Ser Asn
 565 570
 agtataagaa aattagggga aaaacaccca acaaaggaaa agaggaagac tggacaacag 2744
 ggagaaagga gagaaactga agaaagaaga cggtagacca gcattgcagc atttacagtc 2804
 actaattccc ttaagggtga gactatagtg acaggaaagg gtcaatgaca tctcactgat 2864
 gctagactgc agcccctgca ccgtagcctt tggtacatga agtccgctgg gaaatagatg 2924
 ttcgtgtcct atgacaatat attttaactg actttctaga tgccttaata ttgcatgat 2984
 aagctagttt tcttggttag tattcttggt gtttacgcat ggagtcacta ttcctgggta 3044
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 tataaaagaa tctctgtagc ctttagttat ccgtacagat ttattaaatt ttggccctta 3224
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<210> 432

<211> 570

<212> PRT

<213> Mus musculus

<400> 432

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 20 25 30
 Asn Leu Gln Ala Arg Lys Arg Lys Tyr Phe Lys Lys His Glu Lys Arg
 35 40 45
 Met Ser Lys Asp Glu Glu Arg Ala Val Lys Asp Glu Leu Leu Ser Glu
 50 55 60
 Lys Pro Glu Ile Lys Gln Lys Trp Ala Ser Arg Leu Leu Ala Lys Leu
 65 70 75 80
 Arg Lys Asp Ile Arg Gln Glu Tyr Arg Glu Asp Phe Val Leu Thr Val
 85 90 95
 Thr Gly Lys Lys His Pro Cys Cys Val Leu Ser Asn Pro Asp Gln Lys
 100 105 110
 Gly Lys Ile Arg Arg Ile Asp Cys Leu Arg Gln Ala Asp Lys Val Trp
 115 120 125
 Arg Leu Gly Leu Val Met Val Ile Leu Phe Lys Gly Ile Pro Leu Glu
 130 135 140
 Ser Thr Asp Gly Glu Arg Leu Met Lys Ser Pro His Cys Thr Asn Pro
 145 150 155 160
 Ala Leu Cys Val Gln Pro His His Ile Thr Val Ser Val Lys Glu Leu
 165 170 175
 Asp Leu Phe Leu Ala Tyr Tyr Val Gln Glu Gln Asp Ser Gly Gln Ser
 180 185 190
 Gly Ser Pro Ser His Ser Asp Pro Ala Lys Asn Pro Pro Gly Tyr Leu
 195 200 205
 Glu Asp Ser Phe Val Lys Ser Gly Val Phe Asn Val Ser Glu Leu Val

210	215	220
Arg Val Ser Arg Thr Pro Ile Thr Gln Gly Thr Gly Val Asn Phe Pro		
225	230	235
Ile Gly Glu Ile Pro Ser Gln Pro Tyr Tyr His Asp Met Asn Ser Gly		240
	245	250
Val Asn Leu Gln Arg Ser Leu Ser Ser Pro Pro Ser Ser Lys Arg Pro		255
	260	265
Lys Thr Ile Ser Ile Asp Glu Asn Met Glu Pro Ser Pro Thr Gly Asp		270
	275	280
Phe Tyr Pro Ser Pro Asn Ser Pro Ala Ala Gly Ser Arg Thr Trp His		285
	290	295
Glu Arg Asp Gln Asp Met Ser Ser Pro Thr Thr Met Lys Lys Pro Glu		300
305	310	315
Lys Pro Leu Phe Ser Ser Thr Ser Pro Gln Asp Ser Ser Pro Arg Leu		320
	325	330
Ser Thr Phe Pro Gln His His His Pro Gly Ile Pro Gly Val Ala His		335
	340	345
Ser Val Ile Ser Thr Arg Thr Pro Pro Pro Pro Ser Pro Leu Pro Phe		350
	355	360
Pro Thr Gln Ala Ile Leu Pro Pro Ala Pro Ser Ser Tyr Phe Ser His		365
	370	375
Pro Thr Ile Arg Tyr Pro Pro His Leu Asn Pro Gln Asp Thr Leu Lys		380
385	390	395
Asn Tyr Val Pro Ser Tyr Asp Pro Ser Ser Pro Gln Thr Ser Gln Pro		400
	405	410
Asn Ser Ser Gly Gln Val Val Gly Lys Val Pro Gly His Phe Thr Pro		415
	420	425
Val Leu Ala Pro Ser Pro His Pro Ser Ala Val Arg Pro Val Thr Leu		430
	435	440
		445

Thr Met Thr Asp Thr Lys Pro Ile Thr Thr Ser Thr Glu Gly Glu Ala
 450 455 460
 Ala Ser Pro Thr Ala Thr Thr Tyr Thr Ala Ser Gly Thr Ser Gln Ala
 465 470 475 480
 Asn Arg Tyr Val Gly Leu Ser Pro Arg Asp Pro Ser Phe Leu His Gln
 485 490 495
 Gln Gln Leu Arg Ile Cys Asp Trp Thr Met Asn Gln Asn Gly Arg His
 500 505 510
 Leu Tyr Pro Ser Thr Ser Glu Asp Thr Leu Gly Ile Thr Trp Gln Ser
 515 520 525
 Pro Gly Thr Trp Ala Ser Leu Val Pro Phe Gln Val Ser Asn Arg Thr
 530 535 540
 Pro Ile Leu Pro Ala Asn Val Gln Asn Tyr Gly Leu Asn Ile Ile Gly
 545 550 555 560
 Glu Pro Phe Leu Gln Ala Glu Thr Ser Asn
 565 570

<210> 433

<211> 1907

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (401).. (1693)

<400> 433

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cacgagcacg cgcgcgcccc cagacggcgg actcgcsctg gggatgcaag cgcggaavacc 180
 ggagcagcgg caccctcggt ctgcagccga ggaccggccg gagcgcgggc tgggggggga 240
 agaggcggcg gggggcgggc cgggggaggg tccgcsggcg gggcgggcgg ctccccacgc 300
 gcctccccac gcgcctcccc acgcgcctcc ccgcccggscg tcgcctcgcc gcacctcccc 360
 acgcgcctcc ccgcccggcg tcgcctcgcc gcacagcgcc atg gat gag ttc cac 415
 Met Asp Glu Phe His
 1 5
 ccg ttc atc gag gcg ctg ctg ccg cat gtg cgc gcc ttc gcc tac acc 463
 Pro Phe Ile Glu Ala Leu Leu Pro His Val Arg Ala Phe Ala Tyr Thr
 10 15 20
 tgg ttc aac ctg cag gcg cgc aag cgc aag tac ttc aag aag cac gag 511
 Trp Phe Asn Leu Gln Ala Arg Lys Arg Lys Tyr Phe Lys Lys His Glu
 25 30 35
 aag cgc atg tcc aag gac gag gag cgc gcg gtg aag gat gag ctg ctg 559
 Lys Arg Met Ser Lys Asp Glu Glu Arg Ala Val Lys Asp Glu Leu Leu
 40 45 50
 ggt gaa aag gcc gaa gtg aag cag aag tgg gcg tcg cgg ctg ctg gcc 607
 Gly Glu Lys Ala Glu Val Lys Gln Lys Trp Ala Ser Arg Leu Leu Ala
 55 60 65
 aag ctg cgc aag gac atc cgg ccc gag tgc cgt gaa gac ttc gta ctg 655
 Lys Leu Arg Lys Asp Ile Arg Pro Glu Cys Arg Glu Asp Phe Val Leu
 70 75 80 85
 gct gtg act ggc aag aag gcg cca ggc tgt gtg ctg tcc aac ccg gac 703
 Ala Val Thr Gly Lys Lys Ala Pro Gly Cys Val Leu Ser Asn Pro Asp
 90 95 100
 cag aag ggc aag atg cgg cgc atc gac tgc ctg cgc cag gcc gac aaa 751
 Gln Lys Gly Lys Met Arg Arg Ile Asp Cys Leu Arg Gln Ala Asp Lys
 105 110 115
 gtg tgg cgt ctg gac ctg gtc atg gtc atc ctg ttc aag ggc atc cca 799

Val Trp Arg Leu Asp Leu Val Met Val Ile Leu Phe Lys Gly Ile Pro
 120 125 130
 ctg gag agc aca gat ggt gag cgg ctg gtg aag gcg gct gcc tgt gcg 847
 Leu Glu Ser Thr Asp Gly Glu Arg Leu Val Lys Ala Ala Ala Cys Ala
 135 140 145
 cac ccg gtg ctg tgt gtg cag ccg cac cat att ggc gtg gcc gtc aag 895
 His Pro Val Leu Cys Val Gln Pro His His Ile Gly Val Ala Val Lys
 150 155 160 165
 gag ctg gac ctg tac ctg gcc tac ttt gtg cgg gag cgc gat gcg gag 943
 Glu Leu Asp Leu Tyr Leu Ala Tyr Phe Val Arg Glu Arg Asp Ala Glu
 170 175 180
 cag agc agc agc ccc cgg aca ggt gtg ggc tca gac cag gag gac agc 991
 Gln Ser Ser Ser Pro Arg Thr Gly Val Gly Ser Asp Gln Glu Asp Ser
 185 190 195
 aag ccc ata acg ctg gac acc aca gac ttc cag gag agc ttt gtc acg 1039
 Lys Pro Ile Thr Leu Asp Thr Thr Asp Phe Gln Glu Ser Phe Val Thr
 200 205 210
 tca ggt gtg ttc agt gtc acg gag ctg atc caa gtg tct cgg aca cct 1087
 Ser Gly Val Phe Ser Val Thr Glu Leu Ile Gln Val Ser Arg Thr Pro
 215 220 225
 gtg gtg acc gga acc gga ccc aac ttc tca ctg gga gag ctg cag ggt 1135
 Val Val Thr Gly Thr Gly Pro Asn Phe Ser Leu Gly Glu Leu Gln Gly
 230 235 240 245
 cac ctg gca tat gac ctg aac ccg gcc agc gcc ggc atg aga agg act 1183
 His Leu Ala Tyr Asp Leu Asn Pro Ala Ser Ala Gly Met Arg Arg Thr
 250 255 260
 cta ccc agc acc tcc tcc agt ggg agc aag cgg cac aag tcg ggc tcg 1231
 Leu Pro Ser Thr Ser Ser Ser Gly Ser Lys Arg His Lys Ser Gly Ser
 265 270 275

atg gaa gag gac gtg gac acg agc ccc ggc ggc gac tac tac acg tcg 1279
 Met Glu Glu Asp Val Asp Thr Ser Pro Gly Gly Asp Tyr Tyr Thr Ser
 280 285 290
 ccc aac tca ccc acg agt agc agc cgc aac tgg acg gaa gac ata gaa 1327
 Pro Asn Ser Pro Thr Ser Ser Ser Arg Asn Trp Thr Glu Asp Ile Glu
 295 300 305
 gga ggc atc tca tcc ccg gtg aag aag aca gag atg gac aaa tct cca 1375
 Gly Gly Ile Ser Ser Pro Val Lys Lys Thr Glu Met Asp Lys Ser Pro
 310 315 320 325
 ttc aac agc ccg tcc ccc cag gac tcc ccc cgg ctc tcc agc ttc aca 1423
 Phe Asn Ser Pro Ser Pro Gln Asp Ser Pro Arg Leu Ser Ser Phe Thr
 330 335 340
 caa cac cac agg ccg gtc atc gcg gta cac agt ggc atc gcg cgg agc 1471
 Gln His His Arg Pro Val Ile Ala Val His Ser Gly Ile Ala Arg Ser
 345 350 355
 ccc cac ccg acc tcg gcc ctg cac ttc cct gcc acg ccc atc ctg cca 1519
 Pro His Pro Thr Ser Ala Leu His Phe Pro Ala Thr Pro Ile Leu Pro
 360 365 370
 cag aca gcc tcc acc tac ttc ccc cat acg gcc atc cgg tac ccg cca 1567
 Gln Thr Ala Ser Thr Tyr Phe Pro His Thr Ala Ile Arg Tyr Pro Pro
 375 380 385
 cat ctc aac ccc cag gac ccg ctc aag gat ctg gtg tcc ctg gcc tgt 1615
 His Leu Asn Pro Gln Asp Pro Leu Lys Asp Leu Val Ser Leu Ala Cys
 390 395 400 405
 gac ccg gcc acc cag cag cct gga ccg cct gct ctc cgc ccg aca cgt 1663
 Asp Pro Ala Thr Gln Gln Pro Gly Pro Pro Ala Leu Arg Pro Thr Arg
 410 415 420
 ccc ctg caa aca gtc cct ttg tgg gat tag gacggaggga tcctcttgcg 1713
 Pro Leu Gln Thr Val Pro Leu Trp Asp

425

430

ggacagtcct ggtacctggg gtagccgagg ttgccttccc atccctcctt catcaccggt 1773
 ggagtcgccag ggtgacagtc ccagcctgca tttttggtgg aaaattagat ggagtgagaa 1833
 gccccigcgg actcccagct ggatggaaaa gacaggagga gaaaaggaca aagacaaaca 1893
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<210> 434

<211> 430

<212> PRT

<213> Mus musculus

<400> 434

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 20 25 30
 Phe Lys Lys His Glu Lys Arg Met Ser Lys Asp Glu Glu Arg Ala Val
 35 40 45
 Lys Asp Glu Leu Leu Gly Glu Lys Ala Glu Val Lys Gln Lys Trp Ala
 50 55 60
 Ser Arg Leu Leu Ala Lys Leu Arg Lys Asp Ile Arg Pro Glu Cys Arg
 65 70 75 80
 Glu Asp Phe Val Leu Ala Val Thr Gly Lys Lys Ala Pro Gly Cys Val
 85 90 95
 Leu Ser Asn Pro Asp Gln Lys Gly Lys Met Arg Arg Ile Asp Cys Leu
 100 105 110
 Arg Gln Ala Asp Lys Val Trp Arg Leu Asp Leu Val Met Val Ile Leu
 115 120 125
 Phe Lys Gly Ile Pro Leu Glu Ser Thr Asp Gly Glu Arg Leu Val Lys

130	135	140	
Ala Ala Ala Cys Ala His Pro Val Leu Cys Val Gln Pro His His Ile			
145	150	155	160
Gly Val Ala Val Lys Glu Leu Asp Leu Tyr Leu Ala Tyr Phe Val Arg			
	165	170	175
Glu Arg Asp Ala Glu Gln Ser Ser Ser Pro Arg Thr Gly Val Gly Ser			
	180	185	190
Asp Gln Glu Asp Ser Lys Pro Ile Thr Leu Asp Thr Thr Asp Phe Gln			
	195	200	205
Glu Ser Phe Val Thr Ser Gly Val Phe Ser Val Thr Glu Leu Ile Gln			
	210	215	220
Val Ser Arg Thr Pro Val Val Thr Gly Thr Gly Pro Asn Phe Ser Leu			
225	230	235	240
Gly Glu Leu Gln Gly His Leu Ala Tyr Asp Leu Asn Pro Ala Ser Ala			
	245	250	255
Gly Met Arg Arg Thr Leu Pro Ser Thr Ser Ser Ser Gly Ser Lys Arg			
	260	265	270
His Lys Ser Gly Ser Met Glu Glu Asp Val Asp Thr Ser Pro Gly Gly			
	275	280	285
Asp Tyr Tyr Thr Ser Pro Asn Ser Pro Thr Ser Ser Ser Arg Asn Trp			
	290	295	300
Thr Glu Asp Ile Glu Gly Gly Ile Ser Ser Pro Val Lys Lys Thr Glu			
305	310	315	320
Met Asp Lys Ser Pro Phe Asn Ser Pro Ser Pro Gln Asp Ser Pro Arg			
	325	330	335
Leu Ser Ser Phe Thr Gln His His Arg Pro Val Ile Ala Val His Ser			
	340	345	350
Gly Ile Ala Arg Ser Pro His Pro Thr Ser Ala Leu His Phe Pro Ala			
	355	360	365

Thr Pro Ile Leu Pro Gln Thr Ala Ser Thr Tyr Phe Pro His Thr Ala

370

375

380

Ile Arg Tyr Pro Pro His Leu Asn Pro Gln Asp Pro Leu Lys Asp Leu

385

390

395

400

Val Ser Leu Ala Cys Asp Pro Ala Thr Gln Gln Pro Gly Pro Pro Ala

405

410

415

Leu Arg Pro Thr Arg Pro Leu Gln Thr Val Pro Leu Trp Asp

420

425

430

<210> 435

<211> 1729

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (317).. (1642)

<400> 435

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cggcggcccc gagcccgcgg ggccgagcct gtgagcgcgg asggcggcgg gccgagcggg 180
gccgcggggcc gggcgggcgc cgcgcggcag aggccggagc agcggagccg gagcccagac 240
gccagcagcg cgacgccgcc tgccgggcct gccctcgccg cggccggcct ccgcgctcgc 300
gcccgggcgc ccagcg atg tac tcc ccg tac tgc ctc acc cag gat gag ttc 352

Met Tyr Ser Pro Tyr Cys Leu Thr Gln Asp Glu Phe

1

5

10

cac ccg ttt atc gag gcg ctg ctg cct cac gtc cga gcc ttc tcc tac 400

His Pro Phe Ile Glu Ala Leu Leu Pro His Val Arg Ala Phe Ser Tyr

15	20	25	
acc tgg ttc aac ctg cag gcg cgg aag cgc aag tac ttc aag aag cac	448		
Thr Trp Phe Asn Leu Gln Ala Arg Lys Arg Lys Tyr Phe Lys Lys His			
30	35	40	
gag aag cgg atg tca aag gac gag gag cgc gca gtg aag gac gag ctg	496		
Glu Lys Arg Met Ser Lys Asp Glu Glu Arg Ala Val Lys Asp Glu Leu			
45	50	55	60
ctg ggc gag aag cct gag atc aag cag aag tgg gca tcc cgg ctg ttg	544		
Leu Gly Glu Lys Pro Glu Ile Lys Gln Lys Trp Ala Ser Arg Leu Leu			
65	70	75	
gcc aag ctg cgc aaa gac atc cgg ccc gag ttc cgc gag gac ttt gtg	592		
Ala Lys Leu Arg Lys Asp Ile Arg Pro Glu Phe Arg Glu Asp Phe Val			
80	85	90	
cta acc atc acg ggc aag aag ccc ccc tgc tgc gtg ctt tcc aac ccc	640		
Leu Thr Ile Thr Gly Lys Lys Pro Pro Cys Cys Val Leu Ser Asn Pro			
95	100	105	
gac cag aag ggc aag atc cgg cgg att gac tgc ctg cgc cag gct gac	688		
Asp Gln Lys Gly Lys Ile Arg Arg Ile Asp Cys Leu Arg Gln Ala Asp			
110	115	120	
aag gtg tgg cgg ctg gac ctg gtc atg gtg att ttg ttt aaa ggg atc	736		
Lys Val Trp Arg Leu Asp Leu Val Met Val Ile Leu Phe Lys Gly Ile			
125	130	135	140
cct ttg gaa agt act gat ggg gag cgg ctc tac aag tcg ccc cag tgc	784		
Pro Leu Glu Ser Thr Asp Gly Glu Arg Leu Tyr Lys Ser Pro Gln Cys			
145	150	155	
tcg aac ccc ggc ctg tgt gtc cag cca cat cac att gga gtc aca atc	832		
Ser Asn Pro Gly Leu Cys Val Gln Pro His His Ile Gly Val Thr Ile			
160	165	170	
aaa gaa ctg gac ctt tat ctg gct tac ttt gtc cac act ccg gaa tcc	880		

Lys Glu Leu Asp Leu Tyr Leu Ala Tyr Phe Val His Thr Pro Glu Ser
 175 180 185
 gga caa tca gat agt tca aac cag caa gga gat gcg gac atc aaa cca 928
 Gly Gln Ser Asp Ser Ser Asn Gln Gln Gly Asp Ala Asp Ile Lys Pro
 190 195 200
 ctg ccc aac ggg cac tta agt ttc cag gac tgc ttt gtg acg tct ggg 976
 Leu Pro Asn Gly His Leu Ser Phe Gln Asp Cys Phe Val Thr Ser Gly
 205 210 215 220
 gtc tgg aat gtg aca gag ctg gtg aga gta tca cag act cca gtt gcg 1024
 Val Trp Asn Val Thr Glu Leu Val Arg Val Ser Gln Thr Pro Val Ala
 225 230 235
 act gca tca ggg ccc aac ttc tca ctg gcg gac ctg gag agc ccc agc 1072
 Thr Ala Ser Gly Pro Asn Phe Ser Leu Ala Asp Leu Glu Ser Pro Ser
 240 245 250
 tac tac aac ata aat caa gtg acc ctg gga agg cgg tcc atc acc tcc 1120
 Tyr Tyr Asn Ile Asn Gln Val Thr Leu Gly Arg Arg Ser Ile Thr Ser
 255 260 265
 cct cct tcc acc agc agc acc aag cgc ccc aag tcc atc gac gac agt 1168
 Pro Pro Ser Thr Ser Ser Thr Lys Arg Pro Lys Ser Ile Asp Asp Ser
 270 275 280
 gag atg gag agt cca gta gat gat gtg ttc tat cct ggg aca ggc cgc 1216
 Glu Met Glu Ser Pro Val Asp Asp Val Phe Tyr Pro Gly Thr Gly Arg
 285 290 295 300
 tct ccg gcc gct ggc agc agc cag tct agc gga tgg ccc aat gac gtg 1264
 Ser Pro Ala Ala Gly Ser Ser Gln Ser Ser Gly Trp Pro Asn Asp Val
 305 310 315
 gat gca ggc cct gct tct cta aag aag tca gga aag ctg gac ttc tgc 1312
 Asp Ala Gly Pro Ala Ser Leu Lys Lys Ser Gly Lys Leu Asp Phe Cys
 320 325 330

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agc gcc ctc tcc tct cag ggc agt tcc cca cgc atg gct ttc acc cac      1360
Ser Ala Leu Ser Ser Gln Gly Ser Ser Pro Arg Met Ala Phe Thr His
      335              340              345

cac ccg ctg cct ttg ctt gct gga gtc aga cca ggg agc ccc cgg gcc      1408
His Pro Leu Pro Leu Leu Ala Gly Val Arg Pro Gly Ser Pro Arg Ala
      350              355              360

acg gca tca gcg ctg cac ttc cct tcc acg tcc atc atc cag cag tcg      1456
Thr Ala Ser Ala Leu His Phe Pro Ser Thr Ser Ile Ile Gln Gln Ser
      365              370              375              380

agc ccg tat ttc aca cac cca acc atc cgc tac cac cac cac cat ggg      1504
Ser Pro Tyr Phe Thr His Pro Thr Ile Arg Tyr His His His His Gly
      385              390              395

cag gac tcg ctg aag gag ttt gtg cag ttt gtg tgc tct gac ggc tcg      1552
Gln Asp Ser Leu Lys Glu Phe Val Gln Phe Val Cys Ser Asp Gly Ser
      400              405              410

ggt cag gcc acc gga cag cat tca caa cga cag gcg cct cct ctg cca      1600
Gly Gln Ala Thr Gly Gln His Ser Gln Arg Gln Ala Pro Pro Leu Pro
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Thr Gly Leu Ser Ala Ser Asp Pro Gly Thr Ala Thr Phe
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<212> PRT

<213> Mus musculus

<400> 436

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 Ser Lys Asp Glu Glu Arg Ala Val Lys Asp Glu Leu Leu Gly Glu Lys
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 Pro Glu Ile Lys Gln Lys Trp Ala Ser Arg Leu Leu Ala Lys Leu Arg
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 Lys Asp Ile Arg Pro Glu Phe Arg Glu Asp Phe Val Leu Thr Ile Thr
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 Gly Lys Lys Pro Pro Cys Cys Val Leu Ser Asn Pro Asp Gln Lys Gly
 100 105 110
 Lys Ile Arg Arg Ile Asp Cys Leu Arg Gln Ala Asp Lys Val Trp Arg
 115 120 125
 Leu Asp Leu Val Met Val Ile Leu Phe Lys Gly Ile Pro Leu Glu Ser
 130 135 140
 Thr Asp Gly Glu Arg Leu Tyr Lys Ser Pro Gln Cys Ser Asn Pro Gly
 145 150 155 160
 Leu Cys Val Gln Pro His His Ile Gly Val Thr Ile Lys Glu Leu Asp
 165 170 175
 Leu Tyr Leu Ala Tyr Phe Val His Thr Pro Glu Ser Gly Gln Ser Asp
 180 185 190
 Ser Ser Asn Gln Gln Gly Asp Ala Asp Ile Lys Pro Leu Pro Asn Gly
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 His Leu Ser Phe Gln Asp Cys Phe Val Thr Ser Gly Val Trp Asn Val
 210 215 220

Thr Glu Leu Val Arg Val Ser Gln Thr Pro Val Ala Thr Ala Ser Gly
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 Asn Gln Val Thr Leu Gly Arg Arg Ser Ile Thr Ser Pro Pro Ser Thr
 260 265 270
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 275 280 285
 Pro Val Asp Asp Val Phe Tyr Pro Gly Thr Gly Arg Ser Pro Ala Ala
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 Gly Ser Ser Gln Ser Ser Gly Trp Pro Asn Asp Val Asp Ala Gly Pro
 305 310 315 320
 Ala Ser Leu Lys Lys Ser Gly Lys Leu Asp Phe Cys Ser Ala Leu Ser
 325 330 335
 Ser Gln Gly Ser Ser Pro Arg Met Ala Phe Thr His His Pro Leu Pro
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 Leu Leu Ala Gly Val Arg Pro Gly Ser Pro Arg Ala Thr Ala Ser Ala
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 Leu His Phe Pro Ser Thr Ser Ile Ile Gln Gln Ser Ser Pro Tyr Phe
 370 375 380
 Thr His Pro Thr Ile Arg Tyr His His His His Gly Gln Asp Ser Leu
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 Lys Glu Phe Val Gln Phe Val Cys Ser Asp Gly Ser Gly Gln Ala Thr
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<222> (36).. (2666)

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Lys Phe Leu Glu Arg Ala Ala Val Glu Asn Leu Pro Thr Phe Leu Val	
25 30 35	
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Glu Leu Ser Arg Val Leu Ala Asn Pro Gly Asn Ser Gln Val Ala Arg	
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Val Ala Ala Gly Leu Gln Ile Lys Asn Ser Leu Thr Ser Lys Asp Pro	
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gat atc aag gca caa tac cag cag agg tgg ctc gct att gat gct aat	293
Asp Ile Lys Ala Gln Tyr Gln Gln Arg Trp Leu Ala Ile Asp Ala Asn	
75 80 85	
gct cga cgg gaa gtc aag aac tat gtt ttg cag acg ttg ggc aca gaa	341

Ala Arg Arg Glu Val Lys Asn Tyr Val Leu Gln Thr Leu Gly Thr Glu	
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Thr Tyr Arg Pro Ser Ser Ala Ser Gln Cys Val Ala Gly Ile Ala Cys	
105 110 115	
gca gag atc cca gta agc cag tgg cca gag cta att cct cag ctg gta	437
Ala Glu Ile Pro Val Ser Gln Trp Pro Glu Leu Ile Pro Gln Leu Val	
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135 140 145 150	
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Leu Glu Ala Ile Gly Tyr Ile Cys Gln Asp Ile Asp Pro Glu Gln Leu	
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Gln Asp Lys Ser Asn Glu Ile Leu Thr Ala Ile Ile Gln Gly Met Arg	
170 175 180	
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Lys Glu Glu Pro Ser Asn Asn Val Lys Leu Ala Ala Thr Asn Ala Leu	
185 190 195	
ctg aac tca cta gag ttc acc aaa gca aac ttt gac aaa gag tct gaa	677
Leu Asn Ser Leu Glu Phe Thr Lys Ala Asn Phe Asp Lys Glu Ser Glu	
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agg cac ttt atc atg caa gtg gtc tgt gaa gcc aca cag tgt cca gac	725
Arg His Phe Ile Met Gln Val Val Cys Glu Ala Thr Gln Cys Pro Asp	
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Thr Arg Val Arg Val Ala Ala Leu Gln Asn Leu Val Lys Ile Met Ser	
235 240 245	

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Leu Tyr Tyr Gln Tyr Met Glu Thr Tyr Met Gly Pro Ala Leu Phe Ala	
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Ile Thr Ile Glu Ala Met Lys Ser Asp Ile Asp Glu Val Ala Leu Gln	
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Gly Ile Glu Phe Trp Ser Asn Val Cys Asp Glu Glu Met Asp Leu Ala	
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att gag gct tca gag gca gca gag caa gga cgc ccc ccg gag cac acc	965
Ile Glu Ala Ser Glu Ala Ala Glu Gln Gly Arg Pro Pro Glu His Thr	
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agc aaa ttt tac gcc aag gga gca ctg cag tac ttg gtg ccc atc ctc	1013
Ser Lys Phe Tyr Ala Lys Gly Ala Leu Gln Tyr Leu Val Pro Ile Leu	
315 320 325	
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Thr Gln Thr Leu Thr Lys Gln Asp Glu Asn Asp Asp Asp Asp Asp Trp	
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Asn Pro Cys Lys Ala Ala Gly Val Cys Leu Met Leu Leu Ser Thr Cys	
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Cys Glu Asp Asp Ile Val Pro His Val Leu Pro Phe Ile Lys Glu His	
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Ile Lys Asn Pro Asp Trp Arg Tyr Arg Asp Ala Ala Val Val Ala Phe	
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Val Val Arg Asp Thr Thr Ala Trp Thr Val Gly Arg Ile Cys Glu Leu			
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Cys Leu Ile Glu Gly Leu Ser Ala Glu Pro Arg Val Ala Ser Asn Val			
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Cys Trp Ala Phe Ser Ser Leu Ala Glu Ala Ala Tyr Glu Ala Ala Asp			
475	480	485	
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Val Ala Asp Asp Gln Glu Glu Pro Ala Thr Tyr Cys Leu Ser Ser Ser			
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Phe Glu Leu Ile Val Gln Lys Leu Leu Glu Thr Thr Asp Arg Pro Asp			
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 Leu Leu Cys Ala Thr Leu Gln Asn Val Leu Arg Lys Val Gln His Gln
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 680 685 690
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 Leu Leu Leu Glu Asn Leu Gly Asn Glu Asn Val His Arg Ser Val Lys
 695 700 705 710

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Glu Phe Lys Lys Tyr Leu Glu Val Val Leu Asn Thr Leu Gln Gln Ala	
730 735 740	
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Asn Glu Leu Arg Glu Ser Cys Leu Glu Ala Tyr Thr Gly Ile Val Gln	
760 765 770	
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775 780 785 790	
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Gln Pro Arg Val Glu Phe Ile Leu Ser Phe Ile Asp His Ile Ala Gly	
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gat gag gat cat acg gac gga gtg gta gcc tgt gct gct ggt ctg ata	2501
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ggg gac ttg tgt aca gcc ttc ggg aag gat gta ctg aag tta gta gaa	2549
Gly Asp Leu Cys Thr Ala Phe Gly Lys Asp Val Leu Lys Leu Val Glu	
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gct agg cca atg atc cat gaa cta tta act gaa ggg cgg aga tcg aag	2597
Ala Arg Pro Met Ile His Glu Leu Leu Thr Glu Gly Arg Arg Ser Lys	
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act aac aaa gca aag acc ctc gct acg tgg gca acc aag gaa ctg agg	2645
Thr Asn Lys Ala Lys Thr Leu Ala Thr Trp Ala Thr Lys Glu Leu Arg	

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<211> 876

<212> PRT

<213> Mus musculus

<400> 438

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 35 40 45
 Asn Ser Gln Val Ala Arg Val Ala Ala Gly Leu Gln Ile Lys Asn Ser
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 Leu Thr Ser Lys Asp Pro Asp Ile Lys Ala Gln Tyr Gln Gln Arg Trp
 65 70 75 80
 Leu Ala Ile Asp Ala Asn Ala Arg Arg Glu Val Lys Asn Tyr Val Leu
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 Gln Thr Leu Gly Thr Glu Thr Tyr Arg Pro Ser Ser Ala Ser Gln Cys
 100 105 110
 Val Ala Gly Ile Ala Cys Ala Glu Ile Pro Val Ser Gln Trp Pro Glu
 115 120 125
 Leu Ile Pro Gln Leu Val Ala Asn Val Thr Asn Pro Asn Ser Thr Glu
 130 135 140
 His Met Lys Glu Ser Thr Leu Glu Ala Ile Gly Tyr Ile Cys Gln Asp
 145 150 155 160
 Ile Asp Pro Glu Gln Leu Gln Asp Lys Ser Asn Glu Ile Leu Thr Ala
 165 170 175
 Ile Ile Gln Gly Met Arg Lys Glu Glu Pro Ser Asn Asn Val Lys Leu
 180 185 190
 Ala Ala Thr Asn Ala Leu Leu Asn Ser Leu Glu Phe Thr Lys Ala Asn
 195 200 205
 Phe Asp Lys Glu Ser Glu Arg His Phe Ile Met Gln Val Val Cys Glu

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Gly Pro Ala Leu Phe Ala Ile Thr Ile Glu Ala Met Lys Ser Asp Ile			
	260	265	270
Asp Glu Val Ala Leu Gln Gly Ile Glu Phe Trp Ser Asn Val Cys Asp			
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Glu Glu Met Asp Leu Ala Ile Glu Ala Ser Glu Ala Ala Glu Gln Gly			
	290	295	300
Arg Pro Pro Glu His Thr Ser Lys Phe Tyr Ala Lys Gly Ala Leu Gln			
305	310	315	320
Tyr Leu Val Pro Ile Leu Thr Gln Thr Leu Thr Lys Gln Asp Glu Asn			
	325	330	335
Asp Asp Asp Asp Asp Trp Asn Pro Cys Lys Ala Ala Gly Val Cys Leu			
	340	345	350
Met Leu Leu Ser Thr Cys Cys Glu Asp Asp Ile Val Pro His Val Leu			
	355	360	365
Pro Phe Ile Lys Glu His Ile Lys Asn Pro Asp Trp Arg Tyr Arg Asp			
	370	375	380
Ala Ala Val Val Ala Phe Gly Ser Ile Leu Glu Gly Pro Glu Pro Asn			
385	390	395	400
Gln Leu Lys Pro Leu Val Ile Gln Ala Met Pro Thr Leu Ile Glu Leu			
	405	410	415
Met Lys Asp Pro Ser Val Val Val Arg Asp Thr Thr Ala Trp Thr Val			
	420	425	430
Gly Arg Ile Cys Glu Leu Leu Pro Glu Ala Ala Ile Asn Asp Val Tyr			
	435	440	445

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 Arg Val Ala Ser Asn Val Cys Trp Ala Phe Ser Ser Leu Ala Glu Ala
 465 470 475 480
 Ala Tyr Glu Ala Ala Asp Val Ala Asp Asp Gln Glu Glu Pro Ala Thr
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 Tyr Cys Leu Ser Ser Ser Phe Glu Leu Ile Val Gln Lys Leu Leu Glu
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 Thr Thr Asp Arg Pro Asp Gly His Gln Asn Asn Leu Arg Ser Ser Ala
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 Tyr Glu Ser Leu Met Glu Ile Val Lys Asn Ser Ala Lys Asp Cys Tyr
 530 535 540
 Pro Ala Val Gln Lys Thr Thr Leu Val Ile Met Glu Arg Leu Gln Gln
 545 550 555 560
 Val Leu Gln Met Glu Ser His Ile Gln Ser Thr Ser Asp Arg Ile Gln
 565 570 575
 Phe Asn Asp Leu Gln Ser Leu Leu Cys Ala Thr Leu Gln Asn Val Leu
 580 585 590
 Arg Lys Val Gln His Gln Asp Ala Leu Gln Ile Ser Asp Val Val Met
 595 600 605
 Ala Ser Leu Leu Arg Met Phe Gln Ser Thr Ala Gly Ser Gly Gly Val
 610 615 620
 Gln Glu Asp Ala Leu Met Ala Val Ser Thr Leu Val Glu Val Leu Gly
 625 630 635 640
 Gly Glu Phe Leu Lys Tyr Met Glu Ala Phe Lys Pro Phe Leu Gly Ile
 645 650 655
 Gly Leu Lys Asn Tyr Ala Glu Tyr Gln Val Cys Leu Ala Ala Val Gly
 660 665 670
 Leu Val Gly Asp Leu Cys Arg Ala Leu Gln Ser Asn Ile Leu Pro Phe

675	680	685
Cys Asp Glu Val Met Gln Leu Leu Leu Glu Asn Leu Gly Asn Glu Asn		
690	695	700
Val His Arg Ser Val Lys Pro Gln Ile Leu Ser Val Phe Gly Asp Ile		
705	710	715
Ala Leu Ala Ile Gly Gly Glu Phe Lys Lys Tyr Leu Glu Val Val Leu		
725	730	735
Asn Thr Leu Gln Gln Ala Ser Gln Ala Gln Val Asp Lys Ser Asp Phe		
740	745	750
Asp Met Val Asp Tyr Leu Asn Glu Leu Arg Glu Ser Cys Leu Glu Ala		
755	760	765
Tyr Thr Gly Ile Val Gln Gly Leu Lys Gly Asp Gln Glu Asn Val His		
770	775	780
Pro Asp Val Met Leu Val Gln Pro Arg Val Glu Phe Ile Leu Ser Phe		
785	790	795
Ile Asp His Ile Ala Gly Asp Glu Asp His Thr Asp Gly Val Val Ala		
805	810	815
Cys Ala Ala Gly Leu Ile Gly Asp Leu Cys Thr Ala Phe Gly Lys Asp		
820	825	830
Val Leu Lys Leu Val Glu Ala Arg Pro Met Ile His Glu Leu Leu Thr		
835	840	845
Glu Gly Arg Arg Ser Lys Thr Asn Lys Ala Lys Thr Leu Ala Thr Trp		
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Ala Thr Lys Glu Leu Arg Lys Leu Lys Asn Gln Ala		
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<210> 439

<211> 10323

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (356).. (8035)

<400> 439

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 gccgtgcggg ttttctttct ttttctttct gttttttctt ttctttcttg atttgttggg 120
 ttgccatat tgacgaggct gtggtaccca aggctgcgga agctagagtc cgccgggtgga 180
 cgccgcaagc tctttgggta tgcaatggtc tctgcaagat gttttattct tgaattggaa 240
 ccttttacga ctgacaaatg ctggtacttt atctcctata agtggactat aatttcittt 300
 ctttaagaaa ctacataagc agacaaaatt gcaaaggatc tgccctgtgt cgagt atg 358

Met

1

aca gcc acg act cgt ggc tct cca gtt gga ggg aat gac aac cag ggc 406
 Thr Ala Thr Thr Arg Gly Ser Pro Val Gly Gly Asn Asp Asn Gln Gly

5

10

15

caa gcc cct gat gga cag tct cag ccc ccc ctc caa cag aat cag act 454
 Gln Ala Pro Asp Gly Gln Ser Gln Pro Pro Leu Gln Gln Asn Gln Thr

20

25

30

tca tcg cct gat tcg tcc aat gaa aat tcc cct gca act cct cct gat 502
 Ser Ser Pro Asp Ser Ser Asn Glu Asn Ser Pro Ala Thr Pro Pro Asp

35

40

45

gag caa ggt caa ggt gat gct cct cca cag att gaa gat gag gaa cct 550
 Glu Gln Gly Gln Gly Asp Ala Pro Pro Gln Ile Glu Asp Glu Glu Pro

50

55

60

65

gca ttt cca cac act gac ttg cca aag tta gat gat atg atc aac agg 598
 Ala Phe Pro His Thr Asp Leu Pro Lys Leu Asp Asp Met Ile Asn Arg

70	75	80	
cct cga tgg gtt gtt cca gtt ttg ccg aaa ggg gaa tta gaa gtg ctt			646
Pro Arg Trp Val Val Pro Val Leu Pro Lys Gly Glu Leu Glu Val Leu			
85	90	95	
tta gaa gct gct att gat ctt agt aag aaa ggc ctt gat gtt aaa agt			694
Leu Glu Ala Ala Ile Asp Leu Ser Lys Lys Gly Leu Asp Val Lys Ser			
100	105	110	
gaa gca tgt cag cga ttt ttc cga gat ggg cta acg atc tca ttt aca			742
Glu Ala Cys Gln Arg Phe Phe Arg Asp Gly Leu Thr Ile Ser Phe Thr			
115	120	125	
aaa atc ctg aca gat gaa gca gtg agt ggc tgg aag ttt gaa att cac			790
Lys Ile Leu Thr Asp Glu Ala Val Ser Gly Trp Lys Phe Glu Ile His			
130	135	140	145
aga tgc att att aac aat act cat cgc ctg gtg gag cta tgt gtg gct			838
Arg Cys Ile Ile Asn Asn Thr His Arg Leu Val Glu Leu Cys Val Ala			
150	155	160	
aag tta gcc caa gac tgg ttt cca ctt cta gaa ctt ctt gcc atg gcc			886
Lys Leu Ala Gln Asp Trp Phe Pro Leu Leu Glu Leu Leu Ala Met Ala			
165	170	175	
tta aat cct cat tgc aaa ttc cat atc tac aat ggt aca cgt ccc tgc			934
Leu Asn Pro His Cys Lys Phe His Ile Tyr Asn Gly Thr Arg Pro Cys			
180	185	190	
gag tca gtg tcc tca agt gtt cag ttg cct gaa gat gaa ctc ttt gct			982
Glu Ser Val Ser Ser Ser Val Gln Leu Pro Glu Asp Glu Leu Phe Ala			
195	200	205	
cgt tct cca gac cct cga tca cca aaa ggt tgg cta gtg gat ctc ctc			1030
Arg Ser Pro Asp Pro Arg Ser Pro Lys Gly Trp Leu Val Asp Leu Leu			
210	215	220	225
aac aag ttt ggc act tta aat gga ttc cag ata ctg cac gat cgt ttt			1078

Asn Lys Phe Gly Thr Leu Asn Gly Phe Gln Ile Leu His Asp Arg Phe
 230 235 240
 att aat gga tca gca tta aac gtt cag ata att gca gcc ctt att aaa 1126
 Ile Asn Gly Ser Ala Leu Asn Val Gln Ile Ile Ala Ala Leu Ile Lys
 245 250 255
 cca ttt gga cag tgc tat gag ttt ctt act ctt cac aca gtg aaa aag 1174
 Pro Phe Gly Gln Cys Tyr Glu Phe Leu Thr Leu His Thr Val Lys Lys
 260 265 270
 tac ttt ctt cca ata ata gaa atg gtt cca cag ttt tta gaa aac tta 1222
 Tyr Phe Leu Pro Ile Ile Glu Met Val Pro Gln Phe Leu Glu Asn Leu
 275 280 285
 act gat gaa gag ctg aag aaa gaa gca aag aat gaa gcc aaa aat gat 1270
 Thr Asp Glu Glu Leu Lys Lys Glu Ala Lys Asn Glu Ala Lys Asn Asp
 290 295 300 305
 gct ctt tca atg att att aaa tca ttg aag aat tta gct tgc cgg gtt 1318
 Ala Leu Ser Met Ile Ile Lys Ser Leu Lys Asn Leu Ala Ser Arg Val
 310 315 320
 cct gga caa gaa gaa act gta aaa aac tta gaa ata ttt agg tta aaa 1366
 Pro Gly Gln Glu Glu Thr Val Lys Asn Leu Glu Ile Phe Arg Leu Lys
 325 330 335
 atg ata ctt aga ttg ttg caa att tct tct ttc aat gga aag atg aat 1414
 Met Ile Leu Arg Leu Leu Gln Ile Ser Ser Phe Asn Gly Lys Met Asn
 340 345 350
 gca ctg aat gag gtt aat aag gtg att tcc agt gtg tca tac tat acc 1462
 Ala Leu Asn Glu Val Asn Lys Val Ile Ser Ser Val Ser Tyr Tyr Thr
 355 360 365
 cat cgg cat ggc agt tct gag gat gaa gag tgg ctt aca gca gag agg 1510
 His Arg His Gly Ser Ser Glu Asp Glu Glu Trp Leu Thr Ala Glu Arg
 370 375 380 385

atg gct gaa tgg ata cag cag aac aat att tta tcc ata gtt tta cga	1558
Met Ala Glu Trp Ile Gln Gln Asn Asn Ile Leu Ser Ile Val Leu Arg	
390 395 400	
gat agc ctt cat caa cca cag tat gta gag aaa cta gaa aag att ctt	1606
Asp Ser Leu His Gln Pro Gln Tyr Val Glu Lys Leu Glu Lys Ile Leu	
405 410 415	
cgc ttt gtc ata aaa gaa aaa gct ctg acc ttg caa gat ctt gat aat	1654
Arg Phe Val Ile Lys Glu Lys Ala Leu Thr Leu Gln Asp Leu Asp Asn	
420 425 430	
atc tgg gca gca cag gca ggg aaa cat gaa gcc att gta aag aat gta	1702
Ile Trp Ala Ala Gln Ala Gly Lys His Glu Ala Ile Val Lys Asn Val	
435 440 445	
cat gat cta ctg gcc aaa ttg gca tgg gat ttt tct cct gaa caa ctt	1750
His Asp Leu Leu Ala Lys Leu Ala Trp Asp Phe Ser Pro Glu Gln Leu	
450 455 460 465	
gat cat ctt ttt gat tgc ttt aag gcc agt tgg aca aat gca agt aaa	1798
Asp His Leu Phe Asp Cys Phe Lys Ala Ser Trp Thr Asn Ala Ser Lys	
470 475 480	
aag caa cgt gaa aag ctc ctt gag ctg att cgt cgt ctt gca gaa gat	1846
Lys Gln Arg Glu Lys Leu Leu Glu Leu Ile Arg Arg Leu Ala Glu Asp	
485 490 495	
gat aaa gat ggt gtg atg gca cat aaa gta ttg aac ctt ctg tgg aat	1894
Asp Lys Asp Gly Val Met Ala His Lys Val Leu Asn Leu Leu Trp Asn	
500 505 510	
cta gct cac agt gat gat gtg cct gta gat atc atg gat ttg gct ctc	1942
Leu Ala His Ser Asp Asp Val Pro Val Asp Ile Met Asp Leu Ala Leu	
515 520 525	
agt gct cac atc aaa ata cta gat tat agt tgc tcc cag gac cgg gac	1990
Ser Ala His Ile Lys Ile Leu Asp Tyr Ser Cys Ser Gln Asp Arg Asp	

530	535	540	545														
acc	caa	aag	atc	cag	tgg	att	gat	cgc	ttc	ata	gaa	gaa	ctt	cgc	aca	2038	
Thr	Gln	Lys	Ile	Gln	Trp	Ile	Asp	Arg	Phe	Ile	Glu	Glu	Leu	Arg	Thr		
	550		555		560												
	aat	gac	aaa	tgg	gtc	att	cct	gca	ctg	aaa	caa	att	aga	gaa	att	tgt	2086
	Asn	Asp	Lys	Trp	Val	Ile	Pro	Ala	Leu	Lys	Gln	Ile	Arg	Glu	Ile	Cys	
	565		570		575												
	agt	ttg	ttt	ggc	gaa	gca	cct	caa	aat	ttg	agt	caa	agt	cag	cga	agt	2134
	Ser	Leu	Phe	Gly	Glu	Ala	Pro	Gln	Asn	Leu	Ser	Gln	Ser	Gln	Arg	Ser	
	580		585		590												
	ccc	cat	gta	ttt	tat	cgc	cat	gac	tta	atc	aat	caa	ctt	cag	cac	aat	2182
	Pro	His	Val	Phe	Tyr	Arg	His	Asp	Leu	Ile	Asn	Gln	Leu	Gln	His	Asn	
	595		600		605												
	cat	gcc	cta	gtt	act	ttg	gta	gca	gaa	aac	ctt	gca	act	tac	atg	gaa	2230
	His	Ala	Leu	Val	Thr	Leu	Val	Ala	Glu	Asn	Leu	Ala	Thr	Tyr	Met	Glu	
610		615		620		625											
	agc	atg	aga	atg	tat	ggc	aga	gac	aat	gaa	gac	tat	gac	cca	caa	act	2278
	Ser	Met	Arg	Met	Tyr	Gly	Arg	Asp	Asn	Glu	Asp	Tyr	Asp	Pro	Gln	Thr	
	630		635		640												
	gtg	aga	ctg	gga	agt	aga	tat	agt	cat	gtt	caa	gaa	gtc	caa	gaa	cgg	2326
	Val	Arg	Leu	Gly	Ser	Arg	Tyr	Ser	His	Val	Gln	Glu	Val	Gln	Glu	Arg	
	645		650		655												
	ctt	aac	ttt	ctt	agg	ttt	tta	ttg	aag	gat	ggc	cag	ctg	tgg	ctg	tgt	2374
	Leu	Asn	Phe	Leu	Arg	Phe	Leu	Leu	Lys	Asp	Gly	Gln	Leu	Trp	Leu	Cys	
	660		665		670												
	gct	cca	cag	gca	aaa	caa	ata	tgg	aag	tgc	tta	gca	gag	aat	gcg	gtt	2422
	Ala	Pro	Gln	Ala	Lys	Gln	Ile	Trp	Lys	Cys	Leu	Ala	Glu	Asn	Ala	Val	
	675		680		685												
	tat	ctt	tgt	gat	cgt	gaa	gcc	tgt	ttt	aag	tgg	tat	tcc	aaa	tta	atg	2470

Tyr	Leu	Cys	Asp	Arg	Glu	Ala	Cys	Phe	Lys	Trp	Tyr	Ser	Lys	Leu	Met	
690					695				700					705		
gga	gac	gaa	cct	gac	tta	gat	cct	gat	atc	aat	aag	gac	ttc	ttt	gaa	2518
Gly	Asp	Glu	Pro	Asp	Leu	Asp	Pro	Asp	Ile	Asn	Lys	Asp	Phe	Phe	Glu	
			710						715					720		
agt	aat	gtg	ctt	cag	ctt	gat	cct	tcc	ctg	tta	act	gaa	aat	ggg	atg	2566
Ser	Asn	Val	Leu	Gln	Leu	Asp	Pro	Ser	Leu	Leu	Thr	Glu	Asn	Gly	Met	
			725						730					735		
aag	tgt	ttt	gag	aga	ttc	ttc	aaa	gct	gtg	aat	tgt	cga	gaa	gga	aaa	2614
Lys	Cys	Phe	Glu	Arg	Phe	Phe	Lys	Ala	Val	Asn	Cys	Arg	Glu	Gly	Lys	
			740						745					750		
cta	gta	gca	aaa	aga	aga	gcc	tac	atg	atg	gat	gat	ttg	gaa	ttg	ata	2662
Leu	Val	Ala	Lys	Arg	Arg	Ala	Tyr	Met	Met	Asp	Asp	Leu	Glu	Leu	Ile	
			755						760					765		
gga	tta	gac	tat	ctt	tgg	aga	ggt	gta	att	cag	agt	aat	gat	gat	att	2710
Gly	Leu	Asp	Tyr	Leu	Trp	Arg	Val	Val	Ile	Gln	Ser	Asn	Asp	Asp	Ile	
770					775				780					785		
gcc	tgc	cga	gct	att	gat	ctc	ctt	aaa	gag	ata	tac	aca	aac	ctt	ggt	2758
Ala	Cys	Arg	Ala	Ile	Asp	Leu	Leu	Lys	Glu	Ile	Tyr	Thr	Asn	Leu	Gly	
					790				795					800		
cca	agg	ctg	cag	gtc	aat	cag	gtg	gtg	atc	cat	gaa	gac	ttc	att	cag	2806
Pro	Arg	Leu	Gln	Val	Asn	Gln	Val	Val	Ile	His	Glu	Asp	Phe	Ile	Gln	
			805						810					815		
tct	tgc	ttt	gat	cgt	ttg	aaa	gcc	tct	tat	gac	aca	ttg	tgt	gtt	ttg	2854
Ser	Cys	Phe	Asp	Arg	Leu	Lys	Ala	Ser	Tyr	Asp	Thr	Leu	Cys	Val	Leu	
			820						825					830		
gat	ggt	gac	aaa	gac	agt	att	aat	tgt	gca	aga	cag	gaa	gct	gtt	cga	2902
Asp	Gly	Asp	Lys	Asp	Ser	Ile	Asn	Cys	Ala	Arg	Gln	Glu	Ala	Val	Arg	
			835						840					845		

1172/2644

995	1000	1005	
ata atg tca ctt cat ccc aga tac atc tct ttc ctt tgg caa gtt gca	3430		
Ile Met Ser Leu His Pro Arg Tyr Ile Ser Phe Leu Trp Gln Val Ala			
1010	1015	1020	1025
gac tta ggg agc agc cta aat atg cca cct ctt aga gat gga gca aga	3478		
Asp Leu Gly Ser Ser Leu Asn Met Pro Pro Leu Arg Asp Gly Ala Arg			
1030	1035	1040	
gtg ctt atg aaa ctt atg ccg cca gat agt acg aca ata gaa aag tta	3526		
Val Leu Met Lys Leu Met Pro Pro Asp Ser Thr Thr Ile Glu Lys Leu			
1045	1050	1055	
aga gct att tgt ttg gac cat gcc aaa ctt gga gaa agc agc ctt agt	3574		
Arg Ala Ile Cys Leu Asp His Ala Lys Leu Gly Glu Ser Ser Leu Ser			
1060	1065	1070	
cca tct ctt gac tca ctt ttc ttt ggt cct tca gcc tca caa gtg cta	3622		
Pro Ser Leu Asp Ser Leu Phe Phe Gly Pro Ser Ala Ser Gln Val Leu			
1075	1080	1085	
tac cta aca gag gta gtc tat gcc ttg tta atg ccc gct ggt gca ccc	3670		
Tyr Leu Thr Glu Val Val Tyr Ala Leu Leu Met Pro Ala Gly Ala Pro			
1090	1095	1100	1105
ttg act gat gat tcc tcg gat ttt cag ttt cac ttc ttg aaa agt ggt	3718		
Leu Thr Asp Asp Ser Ser Asp Phe Gln Phe His Phe Leu Lys Ser Gly			
1110	1115	1120	
ggt ctg ccc ctt gtc ctg agt atg cta acc aga aat aac ttc cta cca	3766		
Gly Leu Pro Leu Val Leu Ser Met Leu Thr Arg Asn Asn Phe Leu Pro			
1125	1130	1135	
aat gca gat atg gaa act cga agg ggt gcc tac ctc aat gct ctt aaa	3814		
Asn Ala Asp Met Glu Thr Arg Arg Gly Ala Tyr Leu Asn Ala Leu Lys			
1140	1145	1150	
ata gcc aaa ctg tta cta act gcc att ggc tat ggc cat gtt cgt gct	3862		

Ile Ala Lys Leu Leu Leu Thr Ala Ile Gly Tyr Gly His Val Arg Ala
 1155 1160 1165
 gtg gca gaa gct tgt caa cca ggt gta gaa ggc gtg aat cct atg aca 3910
 Val Ala Glu Ala Cys Gln Pro Gly Val Glu Gly Val Asn Pro Met Thr
 1170 1175 1180 1185
 tcg gtc aac caa gta act cat gat caa gca gtg gtg cta caa agt gcc 3958
 Ser Val Asn Gln Val Thr His Asp Gln Ala Val Val Leu Gln Ser Ala
 1190 1195 1200
 ctt cag agc att cct aac cca tca tct gaa tgc atg ctt aga aac gtg 4006
 Leu Gln Ser Ile Pro Asn Pro Ser Ser Glu Cys Met Leu Arg Asn Val
 1205 1210 1215
 tct gtt cgc ctt gct cag cag att tct gat gag gct tca aga tat atg 4054
 Ser Val Arg Leu Ala Gln Gln Ile Ser Asp Glu Ala Ser Arg Tyr Met
 1220 1225 1230
 cct gat att tgt gta att aga gct ata cac caa att att tgg aca tca 4102
 Pro Asp Ile Cys Val Ile Arg Ala Ile His Gln Ile Ile Trp Thr Ser
 1235 1240 1245
 gga tgt gga gga tta cag ctg gta ttc agc cca aat gaa gaa gtg aca 4150
 Gly Cys Gly Gly Leu Gln Leu Val Phe Ser Pro Asn Glu Glu Val Thr
 1250 1255 1260 1265
 aaa att tat gag aag acc aat gca ggc aat gag cca gac ctc gaa gat 4198
 Lys Ile Tyr Glu Lys Thr Asn Ala Gly Asn Glu Pro Asp Leu Glu Asp
 1270 1275 1280
 gaa cag gtt tgc tgt gaa gca ttg gag gtg atg aca ctg tgt ttc gcc 4246
 Glu Gln Val Cys Cys Glu Ala Leu Glu Val Met Thr Leu Cys Phe Ala
 1285 1290 1295
 ttg att cca aca gcc tta gat gct cta agt aaa gaa aaa gct tgg cag 4294
 Leu Ile Pro Thr Ala Leu Asp Ala Leu Ser Lys Glu Lys Ala Trp Gln
 1300 1305 1310

aca ttt att att gac tta ctg ttg cac tgt cac agc aaa act gtt cgt 4342
 Thr Phe Ile Ile Asp Leu Leu Leu His Cys His Ser Lys Thr Val Arg
 1315 1320 1325
 caa gtg gca cag gaa caa ttc ttc tta atg tgc acc aga tgt tgc atg 4390
 Gln Val Ala Gln Glu Gln Phe Phe Leu Met Cys Thr Arg Cys Cys Met
 1330 1335 1340 1345
 ggg cac agg cct cta ctt ttc ttc att acg ctg ctc ttt act gtt ttg 4438
 Gly His Arg Pro Leu Leu Phe Phe Ile Thr Leu Leu Phe Thr Val Leu
 1350 1355 1360
 ggg agc aca gcc aga gag agg gct aaa cac tca ggc gac tac ttt act 4486
 Gly Ser Thr Ala Arg Glu Arg Ala Lys His Ser Gly Asp Tyr Phe Thr
 1365 1370 1375
 ctt tta aga cat ctt ctt aat tac gcc tac aac agt aac att aat gtg 4534
 Leu Leu Arg His Leu Leu Asn Tyr Ala Tyr Asn Ser Asn Ile Asn Val
 1380 1385 1390
 ccc aat gct gaa gtt ctt cta aat aat gaa att gat tgg ctt aaa aga 4582
 Pro Asn Ala Glu Val Leu Leu Asn Asn Glu Ile Asp Trp Leu Lys Arg
 1395 1400 1405
 att agg gat gat gtt aaa agg aca ggt gaa aca ggt gtt gag gag aca 4630
 Ile Arg Asp Asp Val Lys Arg Thr Gly Glu Thr Gly Val Glu Glu Thr
 1410 1415 1420 1425
 atc tta gaa gga cac ctt ggg gtt aca aag gag cta ctg gct ttt cag 4678
 Ile Leu Glu Gly His Leu Gly Val Thr Lys Glu Leu Leu Ala Phe Gln
 1430 1435 1440
 act cct gag aaa aag ttt cat att ggt tgt gaa aag gga ggt gct aat 4726
 Thr Pro Glu Lys Lys Phe His Ile Gly Cys Glu Lys Gly Gly Ala Asn
 1445 1450 1455
 ctc att aaa gaa tta atc gac gac ttc atc ttt ccc gca tcc aat gtt 4774
 Leu Ile Lys Glu Leu Ile Asp Asp Phe Ile Phe Pro Ala Ser Asn Val

1460	1465	1470	
tac ctg cag tat atg aga aat gga gaa ctc cct gct gag cag gcc att			4822
Tyr Leu Gln Tyr Met Arg Asn Gly Glu Leu Pro Ala Glu Gln Ala Ile			
1475	1480	1485	
cct gtg tgt ggt tca cca gcc aca att aat gct ggt ttt gag tta ctt			4870
Pro Val Cys Gly Ser Pro Ala Thr Ile Asn Ala Gly Phe Glu Leu Leu			
1490	1495	1500	1505
gtg gca tta gct gtt ggc tgt gtg agg aac ctc aaa cag ata gta gat			4918
Val Ala Leu Ala Val Gly Cys Val Arg Asn Leu Lys Gln Ile Val Asp			
1510	1515	1520	
tct ttg act gaa atg tat tac att ggt aca gca ata act act tgt gaa			4966
Ser Leu Thr Glu Met Tyr Tyr Ile Gly Thr Ala Ile Thr Thr Cys Glu			
1525	1530	1535	
gca ctt act gag tgg gaa tac ctg cca ccc gtt gga ccc cgt cca cca			5014
Ala Leu Thr Glu Trp Glu Tyr Leu Pro Pro Val Gly Pro Arg Pro Pro			
1540	1545	1550	
aaa gga ttt gtg ggg ctg aaa aat gct ggt gct act tgt tac atg aac			5062
Lys Gly Phe Val Gly Leu Lys Asn Ala Gly Ala Thr Cys Tyr Met Asn			
1555	1560	1565	
tct gtg atc cag caa ctc tat atg atc ccc tct atc agg aat ggt att			5110
Ser Val Ile Gln Gln Leu Tyr Met Ile Pro Ser Ile Arg Asn Gly Ile			
1570	1575	1580	1585
ctt gcc ata gaa ggc aca ggt agt gat gta gat gat gat atg tct ggg			5158
Leu Ala Ile Glu Gly Thr Gly Ser Asp Val Asp Asp Asp Met Ser Gly			
1590	1595	1600	
gat gag aag cag gac aac gag agc aat gtt gat ccc agg gat gat gtg			5206
Asp Glu Lys Gln Asp Asn Glu Ser Asn Val Asp Pro Arg Asp Asp Val			
1605	1610	1615	
ttt gga tat cct caa caa ttt gaa aac aaa cca cca ctg att aaa aca			5254

Phe Gly Tyr Pro Gln Gln Phe Glu Asn Lys Pro Pro Leu Ile Lys Thr
 1620 1625 1630
 gaa aat agg aaa aag tac aat att ggt gtc cta aaa cac ctt cag gtt 5302
 Glu Asn Arg Lys Lys Tyr Asn Ile Gly Val Leu Lys His Leu Gln Val
 1635 1640 1645
 atc ttt ggc cat tta gct gct tct cga cta cag tac tat gtg cct aaa 5350
 Ile Phe Gly His Leu Ala Ala Ser Arg Leu Gln Tyr Tyr Val Pro Lys
 1650 1655 1660 1665
 gga ttt tgg aaa cag tcc agg ctt tgg ggt gag cct gtc aat ctc cgt 5398
 Gly Phe Trp Lys Gln Ser Arg Leu Trp Gly Glu Pro Val Asn Leu Arg
 1670 1675 1680
 gaa caa cat gat gct tta aag tcc ttt aat tct ttg gtg gat agt tta 5446
 Glu Gln His Asp Ala Leu Lys Ser Phe Asn Ser Leu Val Asp Ser Leu
 1685 1690 1695
 gat gaa gct tta aaa gcc tta ggg cat cca gct atg cta agt aaa gtc 5494
 Asp Glu Ala Leu Lys Ala Leu Gly His Pro Ala Met Leu Ser Lys Val
 1700 1705 1710
 ttg gga ggt tcc ttt gct gat cag aaa att tgc caa ggc tgc cca cat 5542
 Leu Gly Gly Ser Phe Ala Asp Gln Lys Ile Cys Gln Gly Cys Pro His
 1715 1720 1725
 agg tac gaa tgt gaa gaa tct ttt acg act ctg aat gta gac att aga 5590
 Arg Tyr Glu Cys Glu Glu Ser Phe Thr Thr Leu Asn Val Asp Ile Arg
 1730 1735 1740 1745
 aac cac caa aat ctt ctg gat tct ttg gaa cag tat gtc aaa gga gac 5638
 Asn His Gln Asn Leu Leu Asp Ser Leu Glu Gln Tyr Val Lys Gly Asp
 1750 1755 1760
 tta cta gaa gga gca aat gct tat cat tgt gaa aaa tgc aat aaa aag 5686
 Leu Leu Glu Gly Ala Asn Ala Tyr His Cys Glu Lys Cys Asn Lys Lys
 1765 1770 1775

gtt gat act gta aag cgc ttg cta att aaa aaa ttg cct cct gtt ctt 5734
 Val Asp Thr Val Lys Arg Leu Leu Ile Lys Lys Leu Pro Pro Val Leu
 1780 1785 1790
 gct atc caa cta aaa cga ttc gat tat gac tgg gaa aga gaa tgt gca 5782
 Ala Ile Gln Leu Lys Arg Phe Asp Tyr Asp Trp Glu Arg Glu Cys Ala
 1795 1800 1805
 atc aag ttc aat gat tac ttt gaa ttt cct cga gag tta gac atg gaa 5830
 Ile Lys Phe Asn Asp Tyr Phe Glu Phe Pro Arg Glu Leu Asp Met Glu
 1810 1815 1820 1825
 cct tac aca gtg gca ggt gtt gct aaa ctg gag gga gat aat gtc aac 5878
 Pro Tyr Thr Val Ala Gly Val Ala Lys Leu Glu Gly Asp Asn Val Asn
 1830 1835 1840
 cca gaa agt cag ctg ata caa cag aat gag cag tct gaa agc gag aaa 5926
 Pro Glu Ser Gln Leu Ile Gln Gln Asn Glu Gln Ser Glu Ser Glu Lys
 1845 1850 1855
 gca gga agc aca aaa tac aga ctt gtg ggt gtg ctt gtg cac agt ggt 5974
 Ala Gly Ser Thr Lys Tyr Arg Leu Val Gly Val Leu Val His Ser Gly
 1860 1865 1870
 caa gca agt ggc gga cat tac tat tct tac atc att cag agg aat gga 6022
 Gln Ala Ser Gly Gly His Tyr Tyr Ser Tyr Ile Ile Gln Arg Asn Gly
 1875 1880 1885
 ggg gat ggt gaa aaa aat cgt tgg tat aaa ttt gat gat gga gat gta 6070
 Gly Asp Gly Glu Lys Asn Arg Trp Tyr Lys Phe Asp Asp Gly Asp Val
 1890 1895 1900 1905
 acg gaa tgt aaa atg gat gac gat gaa gaa atg aaa acc cag tgt ttt 6118
 Thr Glu Cys Lys Met Asp Asp Asp Glu Glu Met Lys Thr Gln Cys Phe
 1910 1915 1920
 ggg gga gag tac atg gga gaa gta ttg gat cac atg atg aaa cgc atg 6166
 Gly Gly Glu Tyr Met Gly Glu Val Leu Asp His Met Met Lys Arg Met

1925	1930	1935	
tcg tac agg cgt cag aaa aga tgg tgg aat gca tat ata ctt ttt tat			6214
Ser Tyr Arg Arg Gln Lys Arg Trp Trp Asn Ala Tyr Ile Leu Phe Tyr			
1940	1945	1950	
gaa cga atg gac aca ata ggt cat gat gat gag gtg ata aga tac ata			6262
Glu Arg Met Asp Thr Ile Gly His Asp Asp Glu Val Ile Arg Tyr Ile			
1955	1960	1965	
tca gag att gct atc acc aca agg ccc cat cag att gtc atg cca tcc			6310
Ser Glu Ile Ala Ile Thr Thr Arg Pro His Gln Ile Val Met Pro Ser			
1970	1975	1980	1985
gcc att gaa aga agt gtt cgg aag cag aat gtt cag ttc atg cac aac			6358
Ala Ile Glu Arg Ser Val Arg Lys Gln Asn Val Gln Phe Met His Asn			
1990	1995	2000	
cga atg cag tac agt ctg gaa tat ttt cag ttt atg aaa aag cta ctg			6406
Arg Met Gln Tyr Ser Leu Glu Tyr Phe Gln Phe Met Lys Lys Leu Leu			
2005	2010	2015	
aca tgt aat ggt gtt tac tta aac cct cct cca ggg caa gat cac ctg			6454
Thr Cys Asn Gly Val Tyr Leu Asn Pro Pro Pro Gly Gln Asp His Leu			
2020	2025	2030	
tct cct gaa gca gaa gaa atc act atg att agt att cag ctt gct gct			6502
Ser Pro Glu Ala Glu Glu Ile Thr Met Ile Ser Ile Gln Leu Ala Ala			
2035	2040	2045	
agg ttc ctt ttt act aca gga ttt cac aca aag aaa ata gtc cga gga			6550
Arg Phe Leu Phe Thr Thr Gly Phe His Thr Lys Lys Ile Val Arg Gly			
2050	2055	2060	2065
tct gcc agt gat tgg tat gat gca ttg tgt att ctc ctg cgt cac agc			6598
Ser Ala Ser Asp Trp Tyr Asp Ala Leu Cys Ile Leu Leu Arg His Ser			
2070	2075	2080	
aag aac gtg cgg ttt tgg ttt gct cac aat gtc ctt ttt aat gtt tca			6646

Lys Asn Val Arg Phe Trp Phe Ala His Asn Val Leu Phe Asn Val Ser
 2085 2090 2095
 aat cga ttc tct gag tac ctt ttg gaa tgc cct agt gca gaa gtg aga 6694
 Asn Arg Phe Ser Glu Tyr Leu Leu Glu Cys Pro Ser Ala Glu Val Arg
 2100 2105 2110
 ggt gca ttt gca aag ctc ata gtt ttc att gca cat ttt tcc tta caa 6742
 Gly Ala Phe Ala Lys Leu Ile Val Phe Ile Ala His Phe Ser Leu Gln
 2115 2120 2125
 gac ggg cct tgt cct tca cct ttt gca tct cct gga cct tct agt cag 6790
 Asp Gly Pro Cys Pro Ser Pro Phe Ala Ser Pro Gly Pro Ser Ser Gln
 2130 2135 2140 2145
 gct tat gac aac tta agt ttg agt gac cac tta cta aga gca gta cta 6838
 Ala Tyr Asp Asn Leu Ser Leu Ser Asp His Leu Leu Arg Ala Val Leu
 2150 2155 2160
 aat ctc ttg cgg agg gag gtt tca gag cat gga cgt cat tta cag cag 6886
 Asn Leu Leu Arg Arg Glu Val Ser Glu His Gly Arg His Leu Gln Gln
 2165 2170 2175
 tat ttc aac ttg ttc gta atg tat gcc aat tta gga gtg gca gag aaa 6934
 Tyr Phe Asn Leu Phe Val Met Tyr Ala Asn Leu Gly Val Ala Glu Lys
 2180 2185 2190
 aca cag ctg ctc aaa ctg agt gta cct gct acc ttt atg ctt gtg tcc 6982
 Thr Gln Leu Leu Lys Leu Ser Val Pro Ala Thr Phe Met Leu Val Ser
 2195 2200 2205
 tta gat gaa ggt cct ggc cct cca att aaa tat cag tat gct gaa tta 7030
 Leu Asp Glu Gly Pro Gly Pro Pro Ile Lys Tyr Gln Tyr Ala Glu Leu
 2210 2215 2220 2225
 ggc aaa tta tac tca gta gtg tca cag ctc atc cgc tgt tgc aat gtc 7078
 Gly Lys Leu Tyr Ser Val Val Ser Gln Leu Ile Arg Cys Cys Asn Val
 2230 2235 2240

tct tca aga atg cag tct tcg atc aat ggt aat cct tct ctt cca aat	7126
Ser Ser Arg Met Gln Ser Ser Ile Asn Gly Asn Pro Ser Leu Pro Asn	
2245 2250 2255	
cct tti ggt gat cct aac tta tca caa cct ata atg cca att caa caa	7174
Pro Phe Gly Asp Pro Asn Leu Ser Gln Pro Ile Met Pro Ile Gln Gln	
2260 2265 2270	
aat gtg gta gac att tta ttt gtg aga aca agt tat gtg aag aaa att	7222
Asn Val Val Asp Ile Leu Phe Val Arg Thr Ser Tyr Val Lys Lys Ile	
2275 2280 2285	
att gaa gac tgc agt aac tct gat gag acc gtc aaa ttg ctt cgc ttt	7270
Ile Glu Asp Cys Ser Asn Ser Asp Glu Thr Val Lys Leu Leu Arg Phe	
2290 2295 2300 2305	
tgc tgc tgg gag aat cct cag ttc tca tct act gtc ctc agt gaa ctt	7318
Cys Cys Trp Glu Asn Pro Gln Phe Ser Ser Thr Val Leu Ser Glu Leu	
2310 2315 2320	
ctt tgg cag gtt gca tat tct tat act tat gaa ctc cgg ccc tat ttg	7366
Leu Trp Gln Val Ala Tyr Ser Tyr Thr Tyr Glu Leu Arg Pro Tyr Leu	
2325 2330 2335	
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Asp Leu Leu Leu Gln Ile Leu Leu Ile Glu Asp Ser Trp Gln Thr His	
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Arg Ile His Asn Ala Leu Lys Gly Ile Pro Asp Asp Arg Asp Gly Leu	
2355 2360 2365	
ttt gac aca att cag cgt tct aag aat cac tac caa aaa aga gca tac	7510
Phe Asp Thr Ile Gln Arg Ser Lys Asn His Tyr Gln Lys Arg Ala Tyr	
2370 2375 2380 2385	
cag tgt ata aaa tgt atg gta gcc ctc ttt agc agt tgt cct gtt gct	7558
Gln Cys Ile Lys Cys Met Val Ala Leu Phe Ser Ser Cys Pro Val Ala	

2390	2395	2400	
tac caa atc ctg cag ggc aat gga gat ctt aaa agg aaa tgg acc tgg			7606
Tyr Gln Ile Leu Gln Gly Asn Gly Asp Leu Lys Arg Lys Trp Thr Trp			
2405	2410	2415	
gca gtg gag tgg ctt gga gat gaa ctt gaa aga aga cca tac act ggc			7654
Ala Val Glu Trp Leu Gly Asp Glu Leu Glu Arg Arg Pro Tyr Thr Gly			
2420	2425	2430	
aat cct cag tac act tac aac aat tgg tct cct cca gtg caa agc aat			7702
Asn Pro Gln Tyr Thr Tyr Asn Asn Trp Ser Pro Pro Val Gln Ser Asn			
2435	2440	2445	
gaa aca tca aat ggt tat ttc tta gag aga tca cac agc gct agg atg			7750
Glu Thr Ser Asn Gly Tyr Phe Leu Glu Arg Ser His Ser Ala Arg Met			
2450	2455	2460	2465
aca ctt gca aaa gct tgt gaa ctc tgt cct gag gag gaa cca gat gac			7798
Thr Leu Ala Lys Ala Cys Glu Leu Cys Pro Glu Glu Glu Pro Asp Asp			
2470	2475	2480	
caa gat gcc cca gat gag cat gaa tca cct cca cca gaa gat gct cct			7846
Gln Asp Ala Pro Asp Glu His Glu Ser Pro Pro Pro Glu Asp Ala Pro			
2485	2490	2495	
tta tac cct cat tcc cct gga tct caa tat cag cag aat aac cat gtg			7894
Leu Tyr Pro His Ser Pro Gly Ser Gln Tyr Gln Gln Asn Asn His Val			
2500	2505	2510	
cat gga cag cca tat aca ggc cca gca gca cat cac atg aac aac cct			7942
His Gly Gln Pro Tyr Thr Gly Pro Ala Ala His His Met Asn Asn Pro			
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cag aga act ggc caa cga gca caa gaa aat tat gaa ggc ggt gaa gaa			7990
Gln Arg Thr Gly Gln Arg Ala Gln Glu Asn Tyr Glu Gly Gly Glu Glu			
2530	2535	2540	2545
gtg tcc cct cct cag acc aag gga tca gtg aaa tgc aca tat taa			8035

Val Ser Pro Pro Gln Thr Lys Gly Ser Val Lys Cys Thr Tyr

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 tttcttgg 10323

<210> 440

<211> 2559

<212> PRT

<213> Mus musculus

<400> 440

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Gly	Gln	Ala	Pro	Asp	Gly	Gln	Ser	Gln	Pro	Pro	Leu	Gln	Gln	Asn	Gln
			20					25					30		
Thr	Ser	Ser	Pro	Asp	Ser	Ser	Asn	Glu	Asn	Ser	Pro	Ala	Thr	Pro	Pro
		35					40					45			
Asp	Glu	Gln	Gly	Gln	Gly	Asp	Ala	Pro	Pro	Gln	Ile	Glu	Asp	Glu	Glu
	50					55				60					
Pro	Ala	Phe	Pro	His	Thr	Asp	Leu	Pro	Lys	Leu	Asp	Asp	Met	Ile	Asn
65					70					75				80	

Arg Pro Arg Trp Val Val Pro Val Leu Pro Lys Gly Glu Leu Glu Val
 85 90 95
 Leu Leu Glu Ala Ala Ile Asp Leu Ser Lys Lys Gly Leu Asp Val Lys
 100 105 110
 Ser Glu Ala Cys Gln Arg Phe Phe Arg Asp Gly Leu Thr Ile Ser Phe
 115 120 125
 Thr Lys Ile Leu Thr Asp Glu Ala Val Ser Gly Trp Lys Phe Glu Ile
 130 135 140
 His Arg Cys Ile Ile Asn Asn Thr His Arg Leu Val Glu Leu Cys Val
 145 150 155 160
 Ala Lys Leu Ala Gln Asp Trp Phe Pro Leu Leu Glu Leu Leu Ala Met
 165 170 175
 Ala Leu Asn Pro His Cys Lys Phe His Ile Tyr Asn Gly Thr Arg Pro
 180 185 190
 Cys Glu Ser Val Ser Ser Ser Val Gln Leu Pro Glu Asp Glu Leu Phe
 195 200 205
 Ala Arg Ser Pro Asp Pro Arg Ser Pro Lys Gly Trp Leu Val Asp Leu
 210 215 220
 Leu Asn Lys Phe Gly Thr Leu Asn Gly Phe Gln Ile Leu His Asp Arg
 225 230 235 240
 Phe Ile Asn Gly Ser Ala Leu Asn Val Gln Ile Ile Ala Ala Leu Ile
 245 250 255
 Lys Pro Phe Gly Gln Cys Tyr Glu Phe Leu Thr Leu His Thr Val Lys
 260 265 270
 Lys Tyr Phe Leu Pro Ile Ile Glu Met Val Pro Gln Phe Leu Glu Asn
 275 280 285
 Leu Thr Asp Glu Glu Leu Lys Lys Glu Ala Lys Asn Glu Ala Lys Asn
 290 295 300
 Asp Ala Leu Ser Met Ile Ile Lys Ser Leu Lys Asn Leu Ala Ser Arg

305 310 315 320
 Val Pro Gly Gln Glu Glu Thr Val Lys Asn Leu Glu Ile Phe Arg Leu
 325 330 335
 Lys Met Ile Leu Arg Leu Leu Gln Ile Ser Ser Phe Asn Gly Lys Met
 340 345 350
 Asn Ala Leu Asn Glu Val Asn Lys Val Ile Ser Ser Val Ser Tyr Tyr
 355 360 365
 Thr His Arg His Gly Ser Ser Glu Asp Glu Glu Trp Leu Thr Ala Glu
 370 375 380
 Arg Met Ala Glu Trp Ile Gln Gln Asn Asn Ile Leu Ser Ile Val Leu
 385 390 395 400
 Arg Asp Ser Leu His Gln Pro Gln Tyr Val Glu Lys Leu Glu Lys Ile
 405 410 415
 Leu Arg Phe Val Ile Lys Glu Lys Ala Leu Thr Leu Gln Asp Leu Asp
 420 425 430
 Asn Ile Trp Ala Ala Gln Ala Gly Lys His Glu Ala Ile Val Lys Asn
 435 440 445
 Val His Asp Leu Leu Ala Lys Leu Ala Trp Asp Phe Ser Pro Glu Gln
 450 455 460
 Leu Asp His Leu Phe Asp Cys Phe Lys Ala Ser Trp Thr Asn Ala Ser
 465 470 475 480
 Lys Lys Gln Arg Glu Lys Leu Leu Glu Leu Ile Arg Arg Leu Ala Glu
 485 490 495
 Asp Asp Lys Asp Gly Val Met Ala His Lys Val Leu Asn Leu Leu Trp
 500 505 510
 Asn Leu Ala His Ser Asp Asp Val Pro Val Asp Ile Met Asp Leu Ala
 515 520 525
 Leu Ser Ala His Ile Lys Ile Leu Asp Tyr Ser Cys Ser Gln Asp Arg
 530 535 540

Asp Thr Gln Lys Ile Gln Trp Ile Asp Arg Phe Ile Glu Glu Leu Arg			
545	550	555	560
Thr Asn Asp Lys Trp Val Ile Pro Ala Leu Lys Gln Ile Arg Glu Ile			
	565	570	575
Cys Ser Leu Phe Gly Glu Ala Pro Gln Asn Leu Ser Gln Ser Gln Arg			
	580	585	590
Ser Pro His Val Phe Tyr Arg His Asp Leu Ile Asn Gln Leu Gln His			
	595	600	605
Asn His Ala Leu Val Thr Leu Val Ala Glu Asn Leu Ala Thr Tyr Met			
	610	615	620
Glu Ser Met Arg Met Tyr Gly Arg Asp Asn Glu Asp Tyr Asp Pro Gln			
625	630	635	640
Thr Val Arg Leu Gly Ser Arg Tyr Ser His Val Gln Glu Val Gln Glu			
	645	650	655
Arg Leu Asn Phe Leu Arg Phe Leu Leu Lys Asp Gly Gln Leu Trp Leu			
	660	665	670
Cys Ala Pro Gln Ala Lys Gln Ile Trp Lys Cys Leu Ala Glu Asn Ala			
	675	680	685
Val Tyr Leu Cys Asp Arg Glu Ala Cys Phe Lys Trp Tyr Ser Lys Leu			
	690	695	700
Met Gly Asp Glu Pro Asp Leu Asp Pro Asp Ile Asn Lys Asp Phe Phe			
705	710	715	720
Glu Ser Asn Val Leu Gln Leu Asp Pro Ser Leu Leu Thr Glu Asn Gly			
	725	730	735
Met Lys Cys Phe Glu Arg Phe Phe Lys Ala Val Asn Cys Arg Glu Gly			
	740	745	750
Lys Leu Val Ala Lys Arg Arg Ala Tyr Met Met Asp Asp Leu Glu Leu			
	755	760	765
Ile Gly Leu Asp Tyr Leu Trp Arg Val Val Ile Gln Ser Asn Asp Asp			

770	775	780	
Ile Ala Cys Arg Ala Ile Asp Leu Leu Lys Glu Ile Tyr Thr Asn Leu			
785	790	795	800
Gly Pro Arg Leu Gln Val Asn Gln Val Val Ile His Glu Asp Phe Ile			
805	810	815	
Gln Ser Cys Phe Asp Arg Leu Lys Ala Ser Tyr Asp Thr Leu Cys Val			
820	825	830	
Leu Asp Gly Asp Lys Asp Ser Ile Asn Cys Ala Arg Gln Glu Ala Val			
835	840	845	
Arg Met Val Arg Val Leu Thr Val Leu Arg Glu Tyr Ile Asn Glu Cys			
850	855	860	
Asp Ser Asp Tyr His Glu Glu Arg Thr Ile Leu Pro Met Ser Arg Ala			
865	870	875	880
Phe Arg Gly Lys His Leu Ser Phe Ile Val Arg Phe Pro Asn Gln Gly			
885	890	895	
Arg Gln Val Asp Asp Leu Glu Val Trp Ser His Thr Asn Asp Thr Ile			
900	905	910	
Gly Ser Val Arg Arg Cys Ile Leu Asn Arg Ile Lys Ala Asn Val Ala			
915	920	925	
His Thr Lys Ile Glu Leu Phe Val Gly Gly Glu Leu Ile Asp Pro Gly			
930	935	940	
Asp Asp Arg Lys Leu Ile Gly Gln Leu Asn Leu Lys Asp Lys Ser Leu			
945	950	955	960
Ile Thr Ala Lys Leu Thr Gln Ile Ser Ser Asn Met Pro Ser Ser Pro			
965	970	975	
Asp Ser Ser Ser Asp Ser Ser Thr Gly Ser Pro Gly Asn His Gly Asn			
980	985	990	
His Tyr Ser Asp Gly Pro Asn Pro Glu Val Glu Ser Cys Leu Pro Gly			
995	1000	1005	

Val Ile Met Ser Leu His Pro Arg Tyr Ile Ser Phe Leu Trp Gln Val
 1010 1015 1020
 Ala Asp Leu Gly Ser Ser Leu Asn Met Pro Pro Leu Arg Asp Gly Ala
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 Arg Val Leu Met Lys Leu Met Pro Pro Asp Ser Thr Thr Ile Glu Lys
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 Leu Arg Ala Ile Cys Leu Asp His Ala Lys Leu Gly Glu Ser Ser Leu
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 Ser Pro Ser Leu Asp Ser Leu Phe Phe Gly Pro Ser Ala Ser Gln Val
 1075 1080 1085
 Leu Tyr Leu Thr Glu Val Val Tyr Ala Leu Leu Met Pro Ala Gly Ala
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 Pro Leu Thr Asp Asp Ser Ser Asp Phe Gln Phe His Phe Leu Lys Ser
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 Gly Gly Leu Pro Leu Val Leu Ser Met Leu Thr Arg Asn Asn Phe Leu
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 Ala Leu Gln Ser Ile Pro Asn Pro Ser Ser Glu Cys Met Leu Arg Asn
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 Met Pro Asp Ile Cys Val Ile Arg Ala Ile His Gln Ile Ile Trp Thr

1235	1240	1245
Ser Gly Cys Gly Gly Leu Gln Leu Val Phe Ser Pro Asn Glu Glu Val		
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Thr Lys Ile Tyr Glu Lys Thr Asn Ala Gly Asn Glu Pro Asp Leu Glu		
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Asp Glu Gln Val Cys Cys Glu Ala Leu Glu Val Met Thr Leu Cys Phe		1280
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Ala Leu Ile Pro Thr Ala Leu Asp Ala Leu Ser Lys Glu Lys Ala Trp		
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Gln Thr Phe Ile Ile Asp Leu Leu Leu His Cys His Ser Lys Thr Val		
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Arg Gln Val Ala Gln Glu Gln Phe Phe Leu Met Cys Thr Arg Cys Cys		
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Met Gly His Arg Pro Leu Leu Phe Phe Ile Thr Leu Leu Phe Thr Val		
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Leu Gly Ser Thr Ala Arg Glu Arg Ala Lys His Ser Gly Asp Tyr Phe		1360
1365	1370	1375
Thr Leu Leu Arg His Leu Leu Asn Tyr Ala Tyr Asn Ser Asn Ile Asn		
1380	1385	1390
Val Pro Asn Ala Glu Val Leu Leu Asn Asn Glu Ile Asp Trp Leu Lys		
1395	1400	1405
Arg Ile Arg Asp Asp Val Lys Arg Thr Gly Glu Thr Gly Val Glu Glu		
1410	1415	1420
Thr Ile Leu Glu Gly His Leu Gly Val Thr Lys Glu Leu Leu Ala Phe		
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Gln Thr Pro Glu Lys Lys Phe His Ile Gly Cys Glu Lys Gly Gly Ala		1440
1445	1450	1455
Asn Leu Ile Lys Glu Leu Ile Asp Asp Phe Ile Phe Pro Ala Ser Asn		
1460	1465	1470

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 Arg Glu Gln His Asp Ala Leu Lys Ser Phe Asn Ser Leu Val Asp Ser
 1685 1690 1695
 Leu Asp Glu Ala Leu Lys Ala Leu Gly His Pro Ala Met Leu Ser Lys

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His Arg Tyr Glu Cys Glu Glu Ser Phe Thr Thr Leu Asn Val Asp Ile			
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Arg Asn His Gln Asn Leu Leu Asp Ser Leu Glu Gln Tyr Val Lys Gly			
745	1750	1755	1760
Asp Leu Leu Glu Gly Ala Asn Ala Tyr His Cys Glu Lys Cys Asn Lys			
1765	1770	1775	
Lys Val Asp Thr Val Lys Arg Leu Leu Ile Lys Lys Leu Pro Pro Val			
1780	1785	1790	
Leu Ala Ile Gln Leu Lys Arg Phe Asp Tyr Asp Trp Glu Arg Glu Cys			
1795	1800	1805	
Ala Ile Lys Phe Asn Asp Tyr Phe Glu Phe Pro Arg Glu Leu Asp Met			
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Gly Gln Ala Ser Gly Gly His Tyr Tyr Ser Tyr Ile Ile Gln Arg Asn			
1875	1880	1885	
Gly Gly Asp Gly Glu Lys Asn Arg Trp Tyr Lys Phe Asp Asp Gly Asp			
1890	1895	1900	
Val Thr Glu Cys Lys Met Asp Asp Asp Glu Glu Met Lys Thr Gln Cys			
905	1910	1915	1920
Phe Gly Gly Glu Tyr Met Gly Glu Val Leu Asp His Met Met Lys Arg			
1925	1930	1935	

Met Ser Tyr Arg Arg Gln Lys Arg Trp Trp Asn Ala Tyr Ile Leu Phe
 1940 1945 1950
 Tyr Glu Arg Met Asp Thr Ile Gly His Asp Asp Glu Val Ile Arg Tyr
 1955 1960 1965
 Ile Ser Glu Ile Ala Ile Thr Thr Arg Pro His Gln Ile Val Met Pro
 1970 1975 1980
 Ser Ala Ile Glu Arg Ser Val Arg Lys Gln Asn Val Gln Phe Met His
 985 1990 1995 2000
 Asn Arg Met Gln Tyr Ser Leu Glu Tyr Phe Gln Phe Met Lys Lys Leu
 2005 2010 2015
 Leu Thr Cys Asn Gly Val Tyr Leu Asn Pro Pro Pro Gly Gln Asp His
 2020 2025 2030
 Leu Ser Pro Glu Ala Glu Glu Ile Thr Met Ile Ser Ile Gln Leu Ala
 2035 2040 2045
 Ala Arg Phe Leu Phe Thr Thr Gly Phe His Thr Lys Lys Ile Val Arg
 2050 2055 2060
 Gly Ser Ala Ser Asp Trp Tyr Asp Ala Leu Cys Ile Leu Leu Arg His
 065 2070 2075 2080
 Ser Lys Asn Val Arg Phe Trp Phe Ala His Asn Val Leu Phe Asn Val
 2085 2090 2095
 Ser Asn Arg Phe Ser Glu Tyr Leu Leu Glu Cys Pro Ser Ala Glu Val
 2100 2105 2110
 Arg Gly Ala Phe Ala Lys Leu Ile Val Phe Ile Ala His Phe Ser Leu
 2115 2120 2125
 Gln Asp Gly Pro Cys Pro Ser Pro Phe Ala Ser Pro Gly Pro Ser Ser
 2130 2135 2140
 Gln Ala Tyr Asp Asn Leu Ser Leu Ser Asp His Leu Leu Arg Ala Val
 145 2150 2155 2160
 Leu Asn Leu Leu Arg Arg Glu Val Ser Glu His Gly Arg His Leu Gln

2165	2170	2175
Gln Tyr Phe Asn Leu Phe Val Met Tyr Ala Asn Leu Gly Val Ala Glu		
2180	2185	2190
Lys Thr Gln Leu Leu Lys Leu Ser Val Pro Ala Thr Phe Met Leu Val		
2195	2200	2205
Ser Leu Asp Glu Gly Pro Gly Pro Pro Ile Lys Tyr Gln Tyr Ala Glu		
2210	2215	2220
Leu Gly Lys Leu Tyr Ser Val Val Ser Gln Leu Ile Arg Cys Cys Asn		
2225	2230	2235
Val Ser Ser Arg Met Gln Ser Ser Ile Asn Gly Asn Pro Ser Leu Pro		
2245	2250	2255
Asn Pro Phe Gly Asp Pro Asn Leu Ser Gln Pro Ile Met Pro Ile Gln		
2260	2265	2270
Gln Asn Val Val Asp Ile Leu Phe Val Arg Thr Ser Tyr Val Lys Lys		
2275	2280	2285
Ile Ile Glu Asp Cys Ser Asn Ser Asp Glu Thr Val Lys Leu Leu Arg		
2290	2295	2300
Phe Cys Cys Trp Glu Asn Pro Gln Phe Ser Ser Thr Val Leu Ser Glu		
305	2310	2315
Leu Leu Trp Gln Val Ala Tyr Ser Tyr Thr Tyr Glu Leu Arg Pro Tyr		
2325	2330	2335
Leu Asp Leu Leu Leu Gln Ile Leu Leu Ile Glu Asp Ser Trp Gln Thr		
2340	2345	2350
His Arg Ile His Asn Ala Leu Lys Gly Ile Pro Asp Asp Arg Asp Gly		
2355	2360	2365
Leu Phe Asp Thr Ile Gln Arg Ser Lys Asn His Tyr Gln Lys Arg Ala		
2370	2375	2380
Tyr Gln Cys Ile Lys Cys Met Val Ala Leu Phe Ser Ser Cys Pro Val		
385	2390	2395
		2400

Ala Tyr Gln Ile Leu Gln Gly Asn Gly Asp Leu Lys Arg Lys Trp Thr			
2405	2410	2415	
Trp Ala Val Glu Trp Leu Gly Asp Glu Leu Glu Arg Arg Pro Tyr Thr			
2420	2425	2430	
Gly Asn Pro Gln Tyr Thr Tyr Asn Asn Trp Ser Pro Pro Val Gln Ser			
2435	2440	2445	
Asn Glu Thr Ser Asn Gly Tyr Phe Leu Glu Arg Ser His Ser Ala Arg			
2450	2455	2460	
Met Thr Leu Ala Lys Ala Cys Glu Leu Cys Pro Glu Glu Glu Pro Asp			
465	2470	2475	2480
Asp Gln Asp Ala Pro Asp Glu His Glu Ser Pro Pro Pro Glu Asp Ala			
2485	2490	2495	
Pro Leu Tyr Pro His Ser Pro Gly Ser Gln Tyr Gln Gln Asn Asn His			
2500	2505	2510	
Val His Gly Gln Pro Tyr Thr Gly Pro Ala Ala His His Met Asn Asn			
2515	2520	2525	
Pro Gln Arg Thr Gly Gln Arg Ala Gln Glu Asn Tyr Glu Gly Gly Glu			
2530	2535	2540	
Glu Val Ser Pro Pro Gln Thr Lys Gly Ser Val Lys Cys Thr Tyr			
545	2550	2555	

<210> 441

<211> 2196

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (87).. (1496)

<400> 441

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 atcagtgcaa gcgaaattaa ggaaaa atg gat ata gaa aat gag cag aca ctg 113

Met Asp Ile Glu Asn Glu Gln Thr Leu

1

5

aat gtg aac ccc act gac cct gac aat tta agc gac tct ctc ttt tct 161
 Asn Val Asn Pro Thr Asp Pro Asp Asn Leu Ser Asp Ser Leu Phe Ser

10

15

20

25

gga gat gaa gaa aat gct ggc act gaa gaa ata aag aat gaa ata aat 209
 Gly Asp Glu Glu Asn Ala Gly Thr Glu Glu Ile Lys Asn Glu Ile Asn

30

35

40

gga aat tgg att tcc gca tct act att aat gaa gct aga atc aat gca 257
 Gly Asn Trp Ile Ser Ala Ser Thr Ile Asn Glu Ala Arg Ile Asn Ala

45

50

55

aaa gcc aaa aga cga ctg cgg aaa aat tca tcc cgg gac tct ggc cga 305
 Lys Ala Lys Arg Arg Leu Arg Lys Asn Ser Ser Arg Asp Ser Gly Arg

60

65

70

gga gac tca gtc agt gac aat gga agt gaa gcg gtt aga agt gga gtt 353
 Gly Asp Ser Val Ser Asp Asn Gly Ser Glu Ala Val Arg Ser Gly Val

75

80

85

gct gtg ccc acc agt cca aaa gga agg ttg cta gat agg cgg tcc aga 401
 Ala Val Pro Thr Ser Pro Lys Gly Arg Leu Leu Asp Arg Arg Ser Arg

90

95

100

105

tct ggg aaa gga agg ggg ctg cca aag aaa ggt ggt gca ggc ggc aag 449
 Ser Gly Lys Gly Arg Gly Leu Pro Lys Lys Gly Gly Ala Gly Gly Lys

110

115

120

ggt gtc tgg ggc aca cct gga cag gtg tat gat gtg gaa gag gtg gat 497
 Gly Val Trp Gly Thr Pro Gly Gln Val Tyr Asp Val Glu Glu Val Asp

125	130	135	
gtg aaa gat cca aac tat gat gac gac cag gag aac tgt gtt tat gaa			545
Val Lys Asp Pro Asn Tyr Asp Asp Asp Gln Glu Asn Cys Val Tyr Glu			
140	145	150	
act gta gtt ttg ccc ctg gat gag acc gca ttt gag aag act cta aca			593
Thr Val Val Leu Pro Leu Asp Glu Thr Ala Phe Glu Lys Thr Leu Thr			
155	160	165	
cca att ata cag gaa tac ttt gag cat gga gat aca aat gaa gtt gcg			641
Pro Ile Ile Gln Glu Tyr Phe Glu His Gly Asp Thr Asn Glu Val Ala			
170	175	180	185
gag atg tta aga gac tta aac ctt ggg gag atg aag agt ggc gtg ccg			689
Glu Met Leu Arg Asp Leu Asn Leu Gly Glu Met Lys Ser Gly Val Pro			
190	195	200	
gtg ttg gca gtg tcc tta gcc ttg gag ggg aag gcc agc cac cgg gag			737
Val Leu Ala Val Ser Leu Ala Leu Glu Gly Lys Ala Ser His Arg Glu			
205	210	215	
atg aca tcc aag ctg ctt tct gac ctt tgc ggg acg gtg atg atc aca			785
Met Thr Ser Lys Leu Leu Ser Asp Leu Cys Gly Thr Val Met Ile Thr			
220	225	230	
aat gac gtg gaa aag tca ttt gac aag ttg ctg aag gat ctc cct gag			833
Asn Asp Val Glu Lys Ser Phe Asp Lys Leu Leu Lys Asp Leu Pro Glu			
235	240	245	
cta gcc ttg gac act cct agg gca ccg cag ttg gtg ggc cag ttt att			881
Leu Ala Leu Asp Thr Pro Arg Ala Pro Gln Leu Val Gly Gln Phe Ile			
250	255	260	265
gct aga gct gtt gga gat gga atc tta tgt aat acc tat atc gat agt			929
Ala Arg Ala Val Gly Asp Gly Ile Leu Cys Asn Thr Tyr Ile Asp Ser			
270	275	280	
tac aaa gga act gta gat tgt gta cag gct cga gct gct ctg gat aag			977

Tyr Lys Gly Thr Val Asp Cys Val Gln Ala Arg Ala Ala Leu Asp Lys
 285 290 295
 gct act gtg ctc ctg agt atg tcc aaa ggc ggg aag cgg aaa gac agt 1025
 Ala Thr Val Leu Leu Ser Met Ser Lys Gly Gly Lys Arg Lys Asp Ser
 300 305 310
 gtg tgg gga tct gga ggc ggg caa cag cct gtc aat cac ctt gtt aaa 1073
 Val Trp Gly Ser Gly Gly Gly Gln Gln Pro Val Asn His Leu Val Lys
 315 320 325
 gag att gat atg ctg ctt aaa gag tat tta ctc tct gga gat ata tct 1121
 Glu Ile Asp Met Leu Leu Lys Glu Tyr Leu Leu Ser Gly Asp Ile Ser
 330 335 340 345
 gaa gct gaa cac tgc ctt aag gaa ctg gaa gta cct cat ttt cac cac 1169
 Glu Ala Glu His Cys Leu Lys Glu Leu Glu Val Pro His Phe His His
 350 355 360
 gag ctt gta tat gaa gcc att ata atg gtt tta gag tca act gga gaa 1217
 Glu Leu Val Tyr Glu Ala Ile Ile Met Val Leu Glu Ser Thr Gly Glu
 365 370 375
 agt gca ttc aag atg atc tta gat tta tta aaa tcc ttg tgg aag tct 1265
 Ser Ala Phe Lys Met Ile Leu Asp Leu Leu Lys Ser Leu Trp Lys Ser
 380 385 390
 tct act att acc ata gac caa atg aaa agg ggc tat gag aga att tac 1313
 Ser Thr Ile Thr Ile Asp Gln Met Lys Arg Gly Tyr Glu Arg Ile Tyr
 395 400 405
 aat gaa atc cca gac att aat ctg gat gtc ccg cac tca tac tct gtt 1361
 Asn Glu Ile Pro Asp Ile Asn Leu Asp Val Pro His Ser Tyr Ser Val
 410 415 420 425
 ctt gag aga ttt gtg gag gaa tgt ttt cag gct gga ata att tcc aaa 1409
 Leu Glu Arg Phe Val Glu Glu Cys Phe Gln Ala Gly Ile Ile Ser Lys
 430 435 440

caa ctc cgt gat ctt tgt cca tca agg gga aga aag cgt ttt gta agt 1457
 Gln Leu Arg Asp Leu Cys Pro Ser Arg Gly Arg Lys Arg Phe Val Ser
 445 450 455
 gaa gga gat gga ggc cgt ctt aaa cct gag agc tac tga gcacagcaac 1506
 Glu Gly Asp Gly Gly Arg Leu Lys Pro Glu Ser Tyr
 460 465 470
 tcttacagtc ttaggtgtta ccaagaacag atctcaactg taagagttgt cagtacaggt 1566
 tttctcttcc ttttgttttt gttattgttt tttttttttt tttttttttt taaagaattt 1626
 gttttgggta caaggcatit ctaaaatttt ataaacittaa gtttaatggg attttttgaa 1686
 ggattttctt tctttttctt ttcttttctt tttttttgag gggaaaitaa tggagggaca 1746
 gaagaggaac caccgaagtg tgggtgttct gataagctac ttcttaagtg ccatgttttag 1806
 gacctgatca ttccaagttt cacgttcatg tatgactgcc gctcctttct ttcaaggaca 1866
 gtgttttttg tagtaaaatc actggtttat tcaaagcttt agttaggggt gagtcaagct 1926
 actaaacccc atgttggctg ctgctgtgga aatgctgtcc tttagagagta aacacacaca 1986
 cacacacaca cacacttttt gttttaaaga atttttaaaa aaacgagtta gtcattgagac 2046
 tttttcatct ttccagggaa tatattgatt ggtctttaaat attagacagt taagtaaattg 2106
 gtggctggaa catctatttt tctacaaaac tggaaaaacg aacccggttc tacaagaattg 2166
 tacagcaaaa taaaacatgt gaaacactgt 2196

<210> 442

<211> 469

<212> PRT

<213> Mus musculus

<400> 442

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 1 5 10 15
 Asp Asn Leu Ser Asp Ser Leu Phe Ser Gly Asp Glu Glu Asn Ala Gly
 20 25 30

Thr Glu Glu Ile Lys Asn Glu Ile Asn Gly Asn Trp Ile Ser Ala Ser
 35 40 45
 Thr Ile Asn Glu Ala Arg Ile Asn Ala Lys Ala Lys Arg Arg Leu Arg
 50 55 60
 Lys Asn Ser Ser Arg Asp Ser Gly Arg Gly Asp Ser Val Ser Asp Asn
 65 70 75 80
 Gly Ser Glu Ala Val Arg Ser Gly Val Ala Val Pro Thr Ser Pro Lys
 85 90 95
 Gly Arg Leu Leu Asp Arg Arg Ser Arg Ser Gly Lys Gly Arg Gly Leu
 100 105 110
 Pro Lys Lys Gly Gly Ala Gly Gly Lys Gly Val Trp Gly Thr Pro Gly
 115 120 125
 Gln Val Tyr Asp Val Glu Glu Val Asp Val Lys Asp Pro Asn Tyr Asp
 130 135 140
 Asp Asp Gln Glu Asn Cys Val Tyr Glu Thr Val Val Leu Pro Leu Asp
 145 150 155 160
 Glu Thr Ala Phe Glu Lys Thr Leu Thr Pro Ile Ile Gln Glu Tyr Phe
 165 170 175
 Glu His Gly Asp Thr Asn Glu Val Ala Glu Met Leu Arg Asp Leu Asn
 180 185 190
 Leu Gly Glu Met Lys Ser Gly Val Pro Val Leu Ala Val Ser Leu Ala
 195 200 205
 Leu Glu Gly Lys Ala Ser His Arg Glu Met Thr Ser Lys Leu Leu Ser
 210 215 220
 Asp Leu Cys Gly Thr Val Met Ile Thr Asn Asp Val Glu Lys Ser Phe
 225 230 235 240
 Asp Lys Leu Leu Lys Asp Leu Pro Glu Leu Ala Leu Asp Thr Pro Arg
 245 250 255
 Ala Pro Gln Leu Val Gly Gln Phe Ile Ala Arg Ala Val Gly Asp Gly

260 265 270
 Ile Leu Cys Asn Thr Tyr Ile Asp Ser Tyr Lys Gly Thr Val Asp Cys
 275 280 285
 Val Gln Ala Arg Ala Ala Leu Asp Lys Ala Thr Val Leu Leu Ser Met
 290 295 300
 Ser Lys Gly Gly Lys Arg Lys Asp Ser Val Trp Gly Ser Gly Gly Gly
 305 310 315 320
 Gln Gln Pro Val Asn His Leu Val Lys Glu Ile Asp Met Leu Leu Lys
 325 330 335
 Glu Tyr Leu Leu Ser Gly Asp Ile Ser Glu Ala Glu His Cys Leu Lys
 340 345 350
 Glu Leu Glu Val Pro His Phe His His Glu Leu Val Tyr Glu Ala Ile
 355 360 365
 Ile Met Val Leu Glu Ser Thr Gly Glu Ser Ala Phe Lys Met Ile Leu
 370 375 380
 Asp Leu Leu Lys Ser Leu Trp Lys Ser Ser Thr Ile Thr Ile Asp Gln
 385 390 395 400
 Met Lys Arg Gly Tyr Glu Arg Ile Tyr Asn Glu Ile Pro Asp Ile Asn
 405 410 415
 Leu Asp Val Pro His Ser Tyr Ser Val Leu Glu Arg Phe Val Glu Glu
 420 425 430
 Cys Phe Gln Ala Gly Ile Ile Ser Lys Gln Leu Arg Asp Leu Cys Pro
 435 440 445
 Ser Arg Gly Arg Lys Arg Phe Val Ser Glu Gly Asp Gly Gly Arg Leu
 450 455 460
 Lys Pro Glu Ser Tyr
 465

<210> 443

<211> 131

<212> DNA

<213> Mus musculus

<400> 443

accaaagcaa ccatcgaact caaggccctt aggttgctga acttccagag gcagctgccc 60
 aggaggtggt ggtgtgcatg cgaagagaca cagccctgga gacagccctc aatgccaagg 120
 cctacaagcg c 131

<210> 444

<211> 1758

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (93).. (1430)

<400> 444

cggcacgagg ggcttcctct ccacccttag ggcttgcggg tctcagcggc gccaagctc 60
 cagtctagcg tcttggggca gtggcctcca cc atg gcg ttg ctg ggc aac ttc 113
 Met Ala Leu Leu Gly Asn Phe
 1 5
 ctt tgc tgc cta ctg gtt gcc tgg ctg tgc ggc ccg ggg ctg ggg gtg 161
 Leu Cys Cys Leu Leu Val Ala Trp Leu Cys Gly Pro Gly Leu Gly Val
 10 15 20
 ccc ctg gcg ccg gcg gat cgc gcc cca gct gtg ggg cag ttt tgg cac 209
 Pro Leu Ala Pro Ala Asp Arg Ala Pro Ala Val Gly Gln Phe Trp His
 25 30 35

gtg act gac tta cat cta gac cct act tac cac att aca gat gac cgt 257
 Val Thr Asp Leu His Leu Asp Pro Thr Tyr His Ile Thr Asp Asp Arg
 40 45 50 55
 acc aag gtg tgt gct tca tct aaa ggc gca aat gcc tcc aac cct ggg 305
 Thr Lys Val Cys Ala Ser Ser Lys Gly Ala Asn Ala Ser Asn Pro Gly
 60 65 70
 cct ttc gga gat gtc ctg tgt gac tct cca tat caa ctt att ttg tca 353
 Pro Phe Gly Asp Val Leu Cys Asp Ser Pro Tyr Gln Leu Ile Leu Ser
 75 80 85
 gcc ttt gat ttt att aag aat tca gga caa gaa gca tct ttc atg ata 401
 Ala Phe Asp Phe Ile Lys Asn Ser Gly Gln Glu Ala Ser Phe Met Ile
 90 95 100
 tgg aca ggg gat agc cca cct cat gtg cca gta cct gaa ctc tcc aca 449
 Trp Thr Gly Asp Ser Pro Pro His Val Pro Val Pro Glu Leu Ser Thr
 105 110 115
 ggc acc gtg ata aag gtg atc act aac atg aca atg act gtc cag aac 497
 Gly Thr Val Ile Lys Val Ile Thr Asn Met Thr Met Thr Val Gln Asn
 120 125 130 135
 ctg ttt cca aac ctc cag gtt ttc cct gca ctg ggc aat cat gac tac 545
 Leu Phe Pro Asn Leu Gln Val Phe Pro Ala Leu Gly Asn His Asp Tyr
 140 145 150
 tgg cca cag gac cag ctg cca ata gtc acc agt aag gtc tac agt gct 593
 Trp Pro Gln Asp Gln Leu Pro Ile Val Thr Ser Lys Val Tyr Ser Ala
 155 160 165
 gtg gct gac ctc tgg aaa ccc tgg ctg ggt gaa gaa gct att agc act 641
 Val Ala Asp Leu Trp Lys Pro Trp Leu Gly Glu Glu Ala Ile Ser Thr
 170 175 180
 tta aag aaa ggt ggt ttt tac tca cag aaa gtt gca agt aat cca ggc 689
 Leu Lys Lys Gly Gly Phe Tyr Ser Gln Lys Val Ala Ser Asn Pro Gly

185	190	195	
ttg agg atc att agc cta aac aca aac ttg tac tat ggc cca aac atc			737
Leu Arg Ile Ile Ser Leu Asn Thr Asn Leu Tyr Tyr Gly Pro Asn Ile			
200	205	210	215
atg acc ctg aac aag aca gac cca gca aat cag ttt gaa tgg ctg gaa			785
Met Thr Leu Asn Lys Thr Asp Pro Ala Asn Gln Phe Glu Trp Leu Glu			
	220	225	230
aat aca ctc aac agc tct cta tgg aat aag gag aag gta tac mtc ata			833
Asn Thr Leu Asn Ser Ser Leu Trp Asn Lys Glu Lys Val Tyr Xaa Ile			
	235	240	245
gcg cat gtt cca gtg ggc tat ctc cct tat gca act gac acc ccg gcg			881
Ala His Val Pro Val Gly Tyr Leu Pro Tyr Ala Thr Asp Thr Pro Ala			
	250	255	260
ata agg cag tac tat aat gag aaa ctg ctt gat att ttc aga aga tac			929
Ile Arg Gln Tyr Tyr Asn Glu Lys Leu Leu Asp Ile Phe Arg Arg Tyr			
	265	270	275
agc tcc gtc att gcg gga cag ttc tat ggc cac acc cat aga gac agc			977
Ser Ser Val Ile Ala Gly Gln Phe Tyr Gly His Thr His Arg Asp Ser			
280	285	290	295
ctt atg gtc ctt tca gat aan aac ggg aat cca ctc aat tct gtg ttt			1025
Leu Met Val Leu Ser Asp Xaa Asn Gly Asn Pro Leu Asn Ser Val Phe			
	300	305	310
gtg gca cct gct gtt aca cca gtg aaa gga gtt tta caa aag gag acc			1073
Val Ala Pro Ala Val Thr Pro Val Lys Gly Val Leu Gln Lys Glu Thr			
	315	320	325
aac aat ccc ggt gtc cgc cta ttt cag tac aag cct ggt gat tac aca			1121
Asn Asn Pro Gly Val Arg Leu Phe Gln Tyr Lys Pro Gly Asp Tyr Thr			
	330	335	340
ttg ctg gac atg gtg cag tat tac ttg aac ttg aca gaa gcc aat cta			1169

Leu Leu Asp Met Val Gln Tyr Tyr Leu Asn Leu Thr Glu Ala Asn Leu
 345 350 355
 aaa gga gaa tcc aac tgg aca ttg gag tat gtc ttg act cag gcc tac 1217
 Lys Gly Glu Ser Asn Trp Thr Leu Glu Tyr Val Leu Thr Gln Ala Tyr
 360 365 370 375
 agt gtt gca gat ctg cag cca aag agt tta tat gcc tta gtt cag caa 1265
 Ser Val Ala Asp Leu Gln Pro Lys Ser Leu Tyr Ala Leu Val Gln Gln
 380 385 390
 ttt gcc acc aaa gac agc aag cag ttc ctg aaa tac tac cat tat tat 1313
 Phe Ala Thr Lys Asp Ser Lys Gln Phe Leu Lys Tyr Tyr His Tyr Tyr
 395 400 405
 ttt gtg agt tat gac agc agt gca act tgt gac cag cat tgt aag acc 1361
 Phe Val Ser Tyr Asp Ser Ser Ala Thr Cys Asp Gln His Cys Lys Thr
 410 415 420
 tta cag gtc tgt gca att atg aat ctt gat agc atg tcc tat gat gat 1409
 Leu Gln Val Cys Ala Ile Met Asn Leu Asp Ser Met Ser Tyr Asp Asp
 425 430 435
 tgc ctt aaa cag cat tta taa agcacagtca ctagtattcc agttgtgttt 1460
 Cys Leu Lys Gln His Leu
 440 445
 gtagaaaaaa aaaatcacat catggtgctc ctgcgacag ctctgaagt gctgggagca 1520
 taggaagatt gacattctgt gtgacttgtg aggctcagat gctgatacca gtaacattca 1580
 aaattaactt cagcattga atacatttaa actgttcatt agcggagiga tatttggaca 1640
 taaatatctc gtcttccaat tttatgtaat tatacctaac ttataccctt gtaaaacttg 1700
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<210> 445

<211> 445

<212> PRT

<213> Mus musculus

<400> 445

Met Ala Leu Leu Gly Asn Phe Leu Cys Cys Leu Leu Val Ala Trp Leu
 1 5 10 15
 Cys Gly Pro Gly Leu Gly Val Pro Leu Ala Pro Ala Asp Arg Ala Pro
 20 25 30
 Ala Val Gly Gln Phe Trp His Val Thr Asp Leu His Leu Asp Pro Thr
 35 40 45
 Tyr His Ile Thr Asp Asp Arg Thr Lys Val Cys Ala Ser Ser Lys Gly
 50 55 60
 Ala Asn Ala Ser Asn Pro Gly Pro Phe Gly Asp Val Leu Cys Asp Ser
 65 70 75 80
 Pro Tyr Gln Leu Ile Leu Ser Ala Phe Asp Phe Ile Lys Asn Ser Gly
 85 90 95
 Gln Glu Ala Ser Phe Met Ile Trp Thr Gly Asp Ser Pro Pro His Val
 100 105 110
 Pro Val Pro Glu Leu Ser Thr Gly Thr Val Ile Lys Val Ile Thr Asn
 115 120 125
 Met Thr Met Thr Val Gln Asn Leu Phe Pro Asn Leu Gln Val Phe Pro
 130 135 140
 Ala Leu Gly Asn His Asp Tyr Trp Pro Gln Asp Gln Leu Pro Ile Val
 145 150 155 160
 Thr Ser Lys Val Tyr Ser Ala Val Ala Asp Leu Trp Lys Pro Trp Leu
 165 170 175
 Gly Glu Glu Ala Ile Ser Thr Leu Lys Lys Gly Gly Phe Tyr Ser Gln
 180 185 190
 Lys Val Ala Ser Asn Pro Gly Leu Arg Ile Ile Ser Leu Asn Thr Asn
 195 200 205

Leu Tyr Tyr Gly Pro Asn Ile Met Thr Leu Asn Lys Thr Asp Pro Ala
 210 215 220
 Asn Gln Phe Glu Trp Leu Glu Asn Thr Leu Asn Ser Ser Leu Trp Asn
 225 230 235 240
 Lys Glu Lys Val Tyr Xaa Ile Ala His Val Pro Val Gly Tyr Leu Pro
 245 250 255
 Tyr Ala Thr Asp Thr Pro Ala Ile Arg Gln Tyr Tyr Asn Glu Lys Leu
 260 265 270
 Leu Asp Ile Phe Arg Arg Tyr Ser Ser Val Ile Ala Gly Gln Phe Tyr
 275 280 285
 Gly His Thr His Arg Asp Ser Leu Met Val Leu Ser Asp Xaa Asn Gly
 290 295 300
 Asn Pro Leu Asn Ser Val Phe Val Ala Pro Ala Val Thr Pro Val Lys
 305 310 315 320
 Gly Val Leu Gln Lys Glu Thr Asn Asn Pro Gly Val Arg Leu Phe Gln
 325 330 335
 Tyr Lys Pro Gly Asp Tyr Thr Leu Leu Asp Met Val Gln Tyr Tyr Leu
 340 345 350
 Asn Leu Thr Glu Ala Asn Leu Lys Gly Glu Ser Asn Trp Thr Leu Glu
 355 360 365
 Tyr Val Leu Thr Gln Ala Tyr Ser Val Ala Asp Leu Gln Pro Lys Ser
 370 375 380
 Leu Tyr Ala Leu Val Gln Gln Phe Ala Thr Lys Asp Ser Lys Gln Phe
 385 390 395 400
 Leu Lys Tyr Tyr His Tyr Tyr Phe Val Ser Tyr Asp Ser Ser Ala Thr
 405 410 415
 Cys Asp Gln His Cys Lys Thr Leu Gln Val Cys Ala Ile Met Asn Leu
 420 425 430
 Asp Ser Met Ser Tyr Asp Asp Cys Leu Lys Gln His Leu

435

440

445

<210> 446

<211> 2394

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (570).. (833)

<400> 446

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 agaattatca tcttctccag gtatatcaca tatacttaca gaaagaccaa tatgatgctg 120
 aattttccat caaatgtatt cttaaaaaat ctgtgtatat tcagttatat acaataatct 180
 cattatitaa aatactaaat ttctccaag aactccaaat acattacaga tgttataaga 240
 attctcacag caaatccctt ggaacaagag gagggcaggc actgtaatct ttaagtctaa 300
 atcatatcaa aaatttttca ctggaaaatt taaggaaata ttccaaga ggcctccatg 360
 caaaaatctg ttttttgta aaaagaaaat taaattctaa tagtaagtaa caattttctg 420
 aacttagttt ctctaataaa cagaatattc agaaaggga ttagtgcag ctccaagggtg 480
 gagccaaagc ctctaagag aacctcatat agggccagaa tatctacaaa tctgaaagta 540
 atcaaagatc ttagaatact agctgtaac atg tgg gca aat ata tct agc ttt 593

Met Trp Ala Asn Ile Ser Ser Phe

1

5

att att cat aaa ttt tgg aag aat gct acg tat tat aca tgt agc ttt 641
 Ile Ile His Lys Phe Trp Lys Asn Ala Thr Tyr Tyr Thr Cys Ser Phe

10

15

20

gtg tgt gtg tgt atg gat atc cat aca cac aca gtt tta caa aat gaa 689
 Val Cys Val Cys Met Asp Ile His Thr His Thr Val Leu Gln Asn Glu

25	30	35	40	
cta ttt atg tac aca tac ttc aga act gcc ttt tcc tta ttt agt gta	737			
Leu Phe Met Tyr Thr Tyr Phe Arg Thr Ala Phe Ser Leu Phe Ser Val				
	45	50	55	
aag att agt tgc tat gga ggt agg acc ctc aac tct gta att ctg tat	785			
Lys Ile Ser Cys Tyr Gly Gly Arg Thr Leu Asn Ser Val Ile Leu Tyr				
	60	65	70	
aat gga gaa ctg ttt caa act ctc tac att ttc aat tta ctc att taa	833			
Asn Gly Glu Leu Phe Gln Thr Leu Tyr Ile Phe Asn Leu Leu Ile				
	75	80	85	
aataattata actaattctg tggccttgac agctaagctc aatcactgaa tcatgatact	893			
tgatatataa aaaactaagt attgttttgg agttaggatc atttcttgtg ttgcccgga	953			
ctcatatgtg ctaggtacat actctgacaa caatagccct gggccctgtt ctgttttgtt	1013			
ttgagccggg gcttgtctat gttaccagg ctagactcca gcttgctctc ctctccgtc	1073			
ggcctcctag gtgcctgcac tactaggcct ggcatcatca gcattttggc caggttagta	1133			
cctggccata atcaacgtcc tactactgga ttttactgct atcttgagct attttctaaa	1193			
taagttttaa taatcaattt gtcattttaa aagaagtgtt ttaaacttat tataaattac	1253			
cagactctgg aatctagggc ttagtcctat ttggtttatg atgatatcta tttcagaaag	1313			
ctatggtcag caattataac aagtcagaca aaaacaaaca cttttgctgt atttgacatc	1373			
agatatatac taaaaaacag aaatggagac tgtacagtaa aagcactgta agactgaagg	1433			
tgaaaactct actgtagggc agtaaatata ctccattgcc taaggttaaa tgacttgttc	1493			
agagacatca tttctacagg catttgcaca ttgaaaatg aaataatata tgtaaccatt	1553			
agttataaag aaataacat gccctcaacg ctgaatatgg acactcatct tttagtatac	1613			
ttatggatac acgtgtgtct tcccaaagct catgcatgtg tgtgtacatt tttttacata	1673			
gtaccaatta ttgaacacca ctgtatgcc tttcatcttc agtaaagcta ttataaatga	1733			
gtctgttatg ttagactctc cccatgagag aagtataaat ttccttgatc atgttatcta	1793			
ggaagaatct ttttctcagg cctgatgggt tctatagact cagatgggaa cttgagtttc	1853			
aaatttgggt atttttact gagaaacagt tgtattttct taatattggc atttatatta	1913			
tagtgagcaa aactatcatt ccattaggag aaatctaag tagctatgtt gatggctcat	1973			

gagtaccatt tataacagaa acaatgttaa atacagatga tactctagac attatgcatt 2033
 tttatatitaa acatgagaaa gatatgtagc tattgtttct gttggacca gatggtagaa 2093
 atactgagtg gatagactgc tctgctgata aaatttttcc aaagcagctg agaaaggctt 2153
 cataagacag catgaaggta cactggggaa tatggaacat ttcctgtgag cacagaactg 2213
 aactttctct gcaagcttac attacagtgt gctgaaacac taagttataa gggtcatgc 2273
 aaatactgtg cctgactca tgttacaatg agaatccatg agtttttagca aatacatgta 2333
 gtttaciaaag ttattaaagt tatggtccac ttgtttaaca ctttctgct cctccccac 2393
 c 2394

<210> 447

<211> 87

<212> PRT

<213> Mus musculus

<400> 447

Met	Trp	Ala	Asn	Ile	Ser	Ser	Phe	Ile	Ile	His	Lys	Phe	Trp	Lys	Asn
1				5					10					15	
Ala	Thr	Tyr	Tyr	Thr	Cys	Ser	Phe	Val	Cys	Val	Cys	Met	Asp	Ile	His
				20					25					30	
Thr	His	Thr	Val	Leu	Gln	Asn	Glu	Leu	Phe	Met	Tyr	Thr	Tyr	Phe	Arg
				35					40					45	
Thr	Ala	Phe	Ser	Leu	Phe	Ser	Val	Lys	Ile	Ser	Cys	Tyr	Gly	Gly	Arg
				50					55					60	
Thr	Leu	Asn	Ser	Val	Ile	Leu	Tyr	Asn	Gly	Glu	Leu	Phe	Gln	Thr	Leu
				65					70					75	
															80
Tyr	Ile	Phe	Asn	Leu	Leu	Ile									

<210> 448

<211> 1155

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (76).. (621)

<400> 448

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 cagaattcag ctaca atg ggg aat gtc ttt gaa aag ctg ttt aaa agc cta 111

Met Gly Asn Val Phe Glu Lys Leu Phe Lys Ser Leu

1

5

10

ttt ggg aaa aag gaa atg cgg att ctc atg gtg ggc tta gat gca gct 159
 Phe Gly Lys Lys Glu Met Arg Ile Leu Met Val Gly Leu Asp Ala Ala

15

20

25

ggc aaa acg acg atc ttg tac aaa ttg aag cta gga gag att gtg aca 207
 Gly Lys Thr Thr Ile Leu Tyr Lys Leu Lys Leu Gly Glu Ile Val Thr

30

35

40

acc atc cct acc ata ggt ttc aat gtg gag aca gta gag tac aaa aac 255
 Thr Ile Pro Thr Ile Gly Phe Asn Val Glu Thr Val Glu Tyr Lys Asn

45

50

55

60

atc agc ttc aca gtc tgg gat gtt ggt ggc cag gac aaa att aga cct 303
 Ile Ser Phe Thr Val Trp Asp Val Gly Gly Gln Asp Lys Ile Arg Pro

65

70

75

ttg tgg cga cat tac ttc cag aac act caa ggt ctg att ttc gtg gtt 351
 Leu Trp Arg His Tyr Phe Gln Asn Thr Gln Gly Leu Ile Phe Val Val

80

85

90

gac agt aat gac cga gag cgg gtc aat gag gcc cgg gaa gaa ttg acc 399
 Asp Ser Asn Asp Arg Glu Arg Val Asn Glu Ala Arg Glu Glu Leu Thr

95	100	105	
aga atg cta gca gaa gat gag ctc aga gat gca gtc ttg ttg gtg ttt	447		
Arg Met Leu Ala Glu Asp Glu Leu Arg Asp Ala Val Leu Leu Val Phe			
110	115	120	
gta aac aaa cag gat ctt cct aat gct atg aat gca gca gag atc aca	495		
Val Asn Lys Gln Asp Leu Pro Asn Ala Met Asn Ala Ala Glu Ile Thr			
125	130	135	140
gac aag ctt ggc tta cac tcc ctt cgc cag aga aac tgg tac att cag	543		
Asp Lys Leu Gly Leu His Ser Leu Arg Gln Arg Asn Trp Tyr Ile Gln			
145	150	155	
gct acc tgt gcg acc agt gga gat ggg ctt tac gaa ggc ctg gac tgg	591		
Ala Thr Cys Ala Thr Ser Gly Asp Gly Leu Tyr Glu Gly Leu Asp Trp			
160	165	170	
ctc tcc aac cag ctc aaa aac cag aag tga tcagaagcaa cccattcccc	641		
Leu Ser Asn Gln Leu Lys Asn Gln Lys			
175	180		
atgcattgtg gcaaagccag ctggcctttc ccgtgtgcat gtgagcgtgt gaggagccca	701		
gggggctgtg tggctggagt gggggcagct ttctcacacc gtgccttata cagctatac	761		
gaaaaccagt attccatttt aagaaaacca gtgttacatt ttgaatgcta ccttccattt	821		
cactagcttt gatggtcatt ttgtctgagg cctccctggg tgtgatagcc agagcatctc	881		
tagcctggaa aagaagaaag caggagccag acaggtcctg ttgttgccaa cctgggtctg	941		
gcctctccat acaccagaa ttctgttggc cgtcagtgct cttttataaa aggaaaggaa	1001		
ggatctgtca ttctttccat tgtgccaaag cttagcagctc acttgtagtg ctttaaagct	1061		
cccgagaaga aaagatgcat tattaccacg ggtttgagga gggtcagagg gggctactcc	1121		
cccaaagttc tgtagctca gactgactca tttt	1155		

<210> 449

<211> 181

<212> PRT

<213> Mus musculus

<400> 449

Met Gly Asn Val Phe Glu Lys Leu Phe Lys Ser Leu Phe Gly Lys Lys
 1 5 10 15
 Glu Met Arg Ile Leu Met Val Gly Leu Asp Ala Ala Gly Lys Thr Thr
 20 25 30
 Ile Leu Tyr Lys Leu Lys Leu Gly Glu Ile Val Thr Thr Ile Pro Thr
 35 40 45
 Ile Gly Phe Asn Val Glu Thr Val Glu Tyr Lys Asn Ile Ser Phe Thr
 50 55 60
 Val Trp Asp Val Gly Gly Gln Asp Lys Ile Arg Pro Leu Trp Arg His
 65 70 75 80
 Tyr Phe Gln Asn Thr Gln Gly Leu Ile Phe Val Val Asp Ser Asn Asp
 85 90 95
 Arg Glu Arg Val Asn Glu Ala Arg Glu Glu Leu Thr Arg Met Leu Ala
 100 105 110
 Glu Asp Glu Leu Arg Asp Ala Val Leu Leu Val Phe Val Asn Lys Gln
 115 120 125
 Asp Leu Pro Asn Ala Met Asn Ala Ala Glu Ile Thr Asp Lys Leu Gly
 130 135 140
 Leu His Ser Leu Arg Gln Arg Asn Trp Tyr Ile Gln Ala Thr Cys Ala
 145 150 155 160
 Thr Ser Gly Asp Gly Leu Tyr Glu Gly Leu Asp Trp Leu Ser Asn Gln
 165 170 175
 Leu Lys Asn Gln Lys
 180

<210> 450

<211> 1107

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (41).. (583)

<400> 450

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                                         Met Gly Leu Thr Ile
                                         1           5
tcc tct ctc ttc tcg cgc ctg ttc ggc aag aag cag atg cgc att ttg      103
Ser Ser Leu Phe Ser Arg Leu Phe Gly Lys Lys Gln Met Arg Ile Leu
           10           15           20
atg gtt gga ttg gat gct gct ggc aag acg aca att ctg tat aaa ctg      151
Met Val Gly Leu Asp Ala Ala Gly Lys Thr Thr Ile Leu Tyr Lys Leu
           25           30           35
aaa tta ggg gaa ata gtc acc acc att cct acc att ggt ttt aat gtg      199
Lys Leu Gly Glu Ile Val Thr Thr Ile Pro Thr Ile Gly Phe Asn Val
           40           45           50
gaa aca gta gaa tat aag aac att tgt ttc aca gta tgg gat gtt ggt      247
Glu Thr Val Glu Tyr Lys Asn Ile Cys Phe Thr Val Trp Asp Val Gly
           55           60           65
ggc caa gat aaa att agg cct ctc tgg agg cat tac ttc cag aat acc      295
Gly Gln Asp Lys Ile Arg Pro Leu Trp Arg His Tyr Phe Gln Asn Thr
           70           75           80           85
cag ggt ctc att ttt gtg gta gat agc aat gat cgt gaa aga atc cag      343
Gln Gly Leu Ile Phe Val Val Asp Ser Asn Asp Arg Glu Arg Ile Gln

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90	95	100	
gaa gga gca gct gtg ctc cag aaa atg ctt ctg gaa gat gag ctg cag			391
Glu Gly Ala Ala Val Leu Gln Lys Met Leu Leu Glu Asp Glu Leu Gln			
105	110	115	
gat gca gtg ctg ctc ctt ttt gca aac aaa cag gat ctg cca aac gct			439
Asp Ala Val Leu Leu Leu Phe Ala Asn Lys Gln Asp Leu Pro Asn Ala			
120	125	130	
atg gcc atc agt gag atg aca gac aag cta ggt ctg cag tct ctc cga			487
Met Ala Ile Ser Glu Met Thr Asp Lys Leu Gly Leu Gln Ser Leu Arg			
135	140	145	
aac aga aca tgg tat gtc caa gcc act tgt gct aca caa gga act ggt			535
Asn Arg Thr Trp Tyr Val Gln Ala Thr Cys Ala Thr Gln Gly Thr Gly			
150	155	160	165
ctg tat gag gga ctg gat tgg ctg tca aat gaa ctt tca aaa cgt taa			583
Leu Tyr Glu Gly Leu Asp Trp Leu Ser Asn Glu Leu Ser Lys Arg			
170	175	180	
atgaagctgg atatctaacc aaggacatgt ttgatagaat tggcttaggc ttgttacaac			643
aaaattagtt tgcatcttgg ttatttaaagg atatctgaga caggtttggg cagaaattac			703
agcgtttaaa acttgttttg ttgccaatta ttgtttacca agaacaatgt tgctatttag			763
caatatgcct gggtttaaga gaaattctcc ttgggaaaga aaagtatcca ttattatgct			823
tcccttgaac ctaaatgcct ggatacagag ctatcctgac accttagac agatctgagt			883
ggtttttgag cccaaaacaa taatgtttta aagttattcc ctigatactt tactgagacc			943
tttatcattc ctgagacagt ctgctgattt aaaaatgtag cattccattt gtatttat			1003
ctaccctttg ccaaaaagat ttttctaata atgcttgtac aggccaaggc cgtggtccaa			1063
aacactattc agttttcttg tactgaggat cccccaccc cacc			1107

<210> 451

<211> 180

<212> PRT

<213> Mus musculus

<400> 451

Met Gly Leu Thr Ile Ser Ser Leu Phe Ser Arg Leu Phe Gly Lys Lys
 1 5 10 15
 Gln Met Arg Ile Leu Met Val Gly Leu Asp Ala Ala Gly Lys Thr Thr
 20 25 30
 Ile Leu Tyr Lys Leu Lys Leu Gly Glu Ile Val Thr Thr Ile Pro Thr
 35 40 45
 Ile Gly Phe Asn Val Glu Thr Val Glu Tyr Lys Asn Ile Cys Phe Thr
 50 55 60
 Val Trp Asp Val Gly Gly Gln Asp Lys Ile Arg Pro Leu Trp Arg His
 65 70 75 80
 Tyr Phe Gln Asn Thr Gln Gly Leu Ile Phe Val Val Asp Ser Asn Asp
 85 90 95
 Arg Glu Arg Ile Gln Glu Gly Ala Ala Val Leu Gln Lys Met Leu Leu
 100 105 110
 Glu Asp Glu Leu Gln Asp Ala Val Leu Leu Leu Phe Ala Asn Lys Gln
 115 120 125
 Asp Leu Pro Asn Ala Met Ala Ile Ser Glu Met Thr Asp Lys Leu Gly
 130 135 140
 Leu Gln Ser Leu Arg Asn Arg Thr Trp Tyr Val Gln Ala Thr Cys Ala
 145 150 155 160
 Thr Gln Gly Thr Gly Leu Tyr Glu Gly Leu Asp Trp Leu Ser Asn Glu
 165 170 175
 Leu Ser Lys Arg
 180

<210> 452

<211> 933

<212> DNA

<213> *Mus musculus*

<220>

<221> CDS

<222> (50).. (592)

<400> 452

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cagccctcgc cccgcgtccc ctgcccgcgc cccgcgcccg ggccccgcc atg ggc ctc 58
                                         Met Gly Leu
                                         1
acg gtg tcc gcg ctc ttt tcg cgg atc ttc ggg aag aag cag atg cgg 106
Thr Val Ser Ala Leu Phe Ser Arg Ile Phe Gly Lys Lys Gln Met Arg
      5              10              15
atc ctt atg gtt ggc ttg gat gcg gct ggc aag act acc atc ctg tac 154
Ile Leu Met Val Gly Leu Asp Ala Ala Gly Lys Thr Thr Ile Leu Tyr
      20              25              30              35
aaa ctg aag ttg ggg gag att gtc acc acc atc ccc act ata ggc ttc 202
Lys Leu Lys Leu Gly Glu Ile Val Thr Thr Ile Pro Thr Ile Gly Phe
              40              45              50
aat gtg gaa aca gtg gaa tat aag aac atc tgt ttc aca gtg tgg gat 250
Asn Val Glu Thr Val Glu Tyr Lys Asn Ile Cys Phe Thr Val Trp Asp
              55              60              65
gtt gga ggc cag gat aag att cgg cct ctg tgg cgg cac tac ttc cag 298
Val Gly Gly Gln Asp Lys Ile Arg Pro Leu Trp Arg His Tyr Phe Gln
              70              75              80
aac act cag ggc ctc atc ttt gtg gta gac agc aac gac cgg gag cgg 346
Asn Thr Gln Gly Leu Ile Phe Val Val Asp Ser Asn Asp Arg Glu Arg

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      85              90              95
gtc cag gag tct gct gat gaa ctc cag aag atg ctg cag gag gat gag 394
Val Gln Glu Ser Ala Asp Glu Leu Gln Lys Met Leu Gln Glu Asp Glu
100              105              110              115
ctc cgg gat gcg gtg ctg ctg gtg ttt gcc aac aag cag gac atg ccc 442
Leu Arg Asp Ala Val Leu Leu Val Phe Ala Asn Lys Gln Asp Met Pro
      120              125              130
aat gcc atg ccc gtg agc gag ctg act gac aag ctg ggc ctt cag cac 490
Asn Ala Met Pro Val Ser Glu Leu Thr Asp Lys Leu Gly Leu Gln His
      135              140              145
ctg cgt agc cgc acg tgg tac gtc cag gcc acc tgt gcc acc caa ggc 538
Leu Arg Ser Arg Thr Trp Tyr Val Gln Ala Thr Cys Ala Thr Gln Gly
      150              155              160
aca ggc ctg tat gat ggg ctg gac tgg ctg tcc cac gag ctg tca aag 586
Thr Gly Leu Tyr Asp Gly Leu Asp Trp Leu Ser His Glu Leu Ser Lys
      165              170              175
cgc tag ccagccaggg gcaggccct gctgcccgga agctcccgcg tgcattcccg 642
Arg.
180
gatgaccaga ctcccgact cctcaggcag tgcccttctt cccactctt cctccccaca 702
gacaggcctc tgctcctgcg cctgcctgca tgctctctct tgcgttgga gcctggagcc 762
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tttggttttt tgattttttt ttcttttttt tctttctttt tttttgtttt g 933

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<210> 453

<211> 180

<212> PRT

<213> Mus musculus

<400> 453

Met Gly Leu Thr Val Ser Ala Leu Phe Ser Arg Ile Phe Gly Lys Lys
 1 5 10 15
 Gln Met Arg Ile Leu Met Val Gly Leu Asp Ala Ala Gly Lys Thr Thr
 20 25 30
 Ile Leu Tyr Lys Leu Lys Leu Gly Glu Ile Val Thr Thr Ile Pro Thr
 35 40 45
 Ile Gly Phe Asn Val Glu Thr Val Glu Tyr Lys Asn Ile Cys Phe Thr
 50 55 60
 Val Trp Asp Val Gly Gly Gln Asp Lys Ile Arg Pro Leu Trp Arg His
 65 70 75 80
 Tyr Phe Gln Asn Thr Gln Gly Leu Ile Phe Val Val Asp Ser Asn Asp
 85 90 95
 Arg Glu Arg Val Gln Glu Ser Ala Asp Glu Leu Gln Lys Met Leu Gln
 100 105 110
 Glu Asp Glu Leu Arg Asp Ala Val Leu Leu Val Phe Ala Asn Lys Gln
 115 120 125
 Asp Met Pro Asn Ala Met Pro Val Ser Glu Leu Thr Asp Lys Leu Gly
 130 135 140
 Leu Gln His Leu Arg Ser Arg Thr Trp Tyr Val Gln Ala Thr Cys Ala
 145 150 155 160
 Thr Gln Gly Thr Gly Leu Tyr Asp Gly Leu Asp Trp Leu Ser His Glu
 165 170 175
 Leu Ser Lys Arg
 180

<210> 454

<211> 1511

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (487).. (1014)

<400> 454

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 gcgccgagcc ggcctcgtcg tcgggggtgt gaccggggtc ggtgccgagt ccggtgctcg 120
 caggccggca ggccggcgca gttggagccg gcgcgtgccg aggcggcgga ggagctgtcg 180
 gcggcgcttg ctgcctcgct cgttcgcgcg gcgcctgcgg gggggaaggg cagtccggg 240
 ccggccggcg ctgcctcgct ctgccttgag caggcgggcg gctctcccg cgcagacgca 300
 gggccccggc ggccggcgat gcccgagtga gcgcaggccg ggccccgtct cccctagccg 360
 gcagcttcgc gcaggccgca gggcgctcct gcagcgcgcg ggcgacgttt cgggctcgcg 420
 gcggcgttgt aggcttgagg ggaccggga caccigaatg cccccggccc cggctcttcc 480
 gacgcg atg ggg aag gtg cta tcc aag atc ttc ggg aac aag gaa atg 528

Met Gly Lys Val Leu Ser Lys Ile Phe Gly Asn Lys Glu Met

1

5

10

cgg atc ctc atg ctg ggc ctg gac gca gcc ggc aag aca acg atc ctg 576

Arg Ile Leu Met Leu Gly Leu Asp Ala Ala Gly Lys Thr Thr Ile Leu

15

20

25

30

tac aag ttg aag ctg ggc caa tcg gtg acc acc atc ccc acg gtg ggc 624

Tyr Lys Leu Lys Leu Gly Gln Ser Val Thr Thr Ile Pro Thr Val Gly

35

40

45

ttc aac gtg gag acg gtg act tac aaa aac gtc aag ttc aac gtg tgg 672

Phe Asn Val Glu Thr Val Thr Tyr Lys Asn Val Lys Phe Asn Val Trp

50

55

60

gat gtg ggc ggc cag gac aag atc cgg ccg ctg tgg cgg cat tac tac 720

Asp Val Gly Gly Gln Asp Lys Ile Arg Pro Leu Trp Arg His Tyr Tyr
 65 70 75
 acc ggg acc cag ggt ctg atc ttc gtg gta gac tgc gcc gac cgc gac 768
 Thr Gly Thr Gln Gly Leu Ile Phe Val Val Asp Cys Ala Asp Arg Asp
 80 85 90
 cgc atc gac gag gcc cgc cag gag ctg cac cgc att atc aat gac cgg 816
 Arg Ile Asp Glu Ala Arg Gln Glu Leu His Arg Ile Ile Asn Asp Arg
 95 100 105 110
 gag atg agg gac gcc atc atc ctc atc ttc gcc aac aag cag gac ctg 864
 Glu Met Arg Asp Ala Ile Ile Leu Ile Phe Ala Asn Lys Gln Asp Leu
 115 120 125
 ccc gat gcc atg aaa ccc cat gag atc cag gag aaa ctg ggc ctg acc 912
 Pro Asp Ala Met Lys Pro His Glu Ile Gln Glu Lys Leu Gly Leu Thr
 130 135 140
 cgg att cgg gac agg aac tgg tat gtg cag ccc tcc tgt gcc acc tcc 960
 Arg Ile Arg Asp Arg Asn Trp Tyr Val Gln Pro Ser Cys Ala Thr Ser
 145 150 155
 ggg gac gga ctc tat gag ggg ctc aca tgg tta acc tct aac tac aaa 1008
 Gly Asp Gly Leu Tyr Glu Gly Leu Thr Trp Leu Thr Ser Asn Tyr Lys
 160 165 170
 tcc taa tgagcgtcct ccaccagcc cccggaagga gagaaatcca aaaccattc 1064
 Ser
 175
 ctaggattat cgccacctcc atcacctctt tgaattgcca ctctcttttt tgaatctgaa 1124
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 tttttttttt tctcttggc ttgctgttag gatgctctga tctgacattt gacacgaata 1244
 cagtctaga tgccttgiga ctccagcaa acggggtggg gtaatagcaa ctcttggttaa 1304
 agtcccttat aataatggtt tgattttttt atttcgagag aatcttcccc cccatgtaig 1364
 ctttttttcc tttttgcca ggttcttata acttgctgta gatggcttat ttgcatcca 1424

tgcagactat gtccaagtc tgtttcatct agtaaac tga aaattattgc ttaatcaaac 1484
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<210> 455

<211> 175

<212> PRT

<213> Mus musculus

<400> 455

Met	Gly	Lys	Val	Leu	Ser	Lys	Ile	Phe	Gly	Asn	Lys	Glu	Met	Arg	Ile
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Leu	Met	Leu	Gly	Leu	Asp	Ala	Ala	Gly	Lys	Thr	Thr	Ile	Leu	Tyr	Lys
				20				25					30		
Leu	Lys	Leu	Gly	Gln	Ser	Val	Thr	Thr	Ile	Pro	Thr	Val	Gly	Phe	Asn
				35				40					45		
Val	Glu	Thr	Val	Thr	Tyr	Lys	Asn	Val	Lys	Phe	Asn	Val	Trp	Asp	Val
				50				55					60		
Gly	Gly	Gln	Asp	Lys	Ile	Arg	Pro	Leu	Trp	Arg	His	Tyr	Tyr	Thr	Gly
65				70				75					80		
Thr	Gln	Gly	Leu	Ile	Phe	Val	Val	Asp	Cys	Ala	Asp	Arg	Asp	Arg	Ile
				85				90					95		
Asp	Glu	Ala	Arg	Gln	Glu	Leu	His	Arg	Ile	Ile	Asn	Asp	Arg	Glu	Met
				100				105					110		
Arg	Asp	Ala	Ile	Ile	Leu	Ile	Phe	Ala	Asn	Lys	Gln	Asp	Leu	Pro	Asp
				115				120					125		
Ala	Met	Lys	Pro	His	Glu	Ile	Gln	Glu	Lys	Leu	Gly	Leu	Thr	Arg	Ile
				130				135					140		
Arg	Asp	Arg	Asn	Trp	Tyr	Val	Gln	Pro	Ser	Cys	Ala	Thr	Ser	Gly	Asp
145				150				155					160		

Gly Leu Tyr Glu Gly Leu Thr Trp Leu Thr Ser Asn Tyr Lys Ser

165

170

175

<210> 456

<211> 966

<212> DNA

<213> Mus musculus

<400> 456

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gatttcaagc gattgcaaga ggaccacact gtgggggtca gtggcgcccc atctgaaaac 120
aacatcatgc agtggaatgc agttatatit ggaccagaag ggacacccit tgaagatggt 180
acttttaaac tagtaataga attttctgaa gaatatccaa ataaaccacc aaccgttagg 240
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966

<210> 457

<211> 1976

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (30).. (1478)

<400> 457

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Lys Ser Lys Gln Glu Lys Met Ala Cys Arg Asp Lys Ser Met Gln Asp
    10              15              20
cga ttg cga tta ggc cac ttt act act gtc cgg cat gga gcc tcg ttt      149
Arg Leu Arg Leu Gly His Phe Thr Thr Val Arg His Gly Ala Ser Phe
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act gag cag tgg aca gat ggt tat gct ttc caa aac ctc atc aag caa      197
Thr Glu Gln Trp Thr Asp Gly Tyr Ala Phe Gln Asn Leu Ile Lys Gln
              45              50              55
cag gaa agg ata aat tca cag aga gaa gag ata gaa agg caa cgg aaa      245
Gln Glu Arg Ile Asn Ser Gln Arg Glu Glu Ile Glu Arg Gln Arg Lys
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atg tta gca aaa cgg aaa cct cct gcc atg ggt cag gcc cct cct gca      293
Met Leu Ala Lys Arg Lys Pro Pro Ala Met Gly Gln Ala Pro Pro Ala
              75              80              85
acc aat gag cag aaa caa cgg aaa agc aag act aat gga gct gaa aat      341
Thr Asn Glu Gln Lys Gln Arg Lys Ser Lys Thr Asn Gly Ala Glu Asn
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 Leu Arg Leu Gly His Leu Lys Lys Glu Glu Ala Glu Ile Gln Ala Glu
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 Leu Glu Arg Leu Glu Arg Val Arg Asn Leu His Ile Arg Glu Leu Lys
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 Arg Ile His Asn Glu Asp Asn Ser Gln Phe Lys Asp His Pro Thr Leu
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 Tyr His Lys His Ala Cys Arg Glu Tyr Arg Ile His Lys Glu Leu Asp
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 His Pro Arg Ile Val Lys Leu Tyr Asp Tyr Phe Ser Leu Asp Thr Asp
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att atg cag att gtg aat gct tta aag tac tta aat gaa ata aaa cct	917		
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ccc atc ata cac tat gac ctc aaa cca ggt aat atc ctt tta gta aat	965		
Pro Ile Ile His Tyr Asp Leu Lys Pro Gly Asn Ile Leu Leu Val Asn			
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ggt aca gca tgt gga gag ata aaa att aca gat ttt ggt ctt tcc aag	1013		
Gly Thr Ala Cys Gly Glu Ile Lys Ile Thr Asp Phe Gly Leu Ser Lys			
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330	335	340	
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Ser Gln Gly Ala Gly Thr Tyr Trp Tyr Leu Pro Pro Glu Cys Phe Val			
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gtt ggg aaa gag cca cca aag atc tca aat aaa gtc gat gtt tgg tca	1157		
Val Gly Lys Glu Pro Pro Lys Ile Ser Asn Lys Val Asp Val Trp Ser			
365	370	375	
gtg ggt gtg atc ttc tac cag tgt ctt tat ggg agg aag cct ttt ggg	1205		
Val Gly Val Ile Phe Tyr Gln Cys Leu Tyr Gly Arg Lys Pro Phe Gly			
380	385	390	
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His Asn Gln Ser Gln Gln Asp Ile Leu Gln Glu Asn Thr Ile Leu Lys			
395	400	405	
gct act gaa gta cag ttc ccg cca aag cca gta gta aca cct gaa gca	1301		

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 Lys Ser Val Ser Thr Ser Ser Pro Ala Gly Ala Ala Ile Ala Ser Thr
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 Ser Gly Ala Ser Asn Asn Ser Ser Ser Asn
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<210> 458

<211> 482

<212> PRT

<213> Mus musculus

<400> 458

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 Glu Glu Ile Glu Arg Gln Arg Lys Met Leu Ala Lys Arg Lys Pro Pro
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 Ala Met Gly Gln Ala Pro Pro Ala Thr Asn Glu Gln Lys Gln Arg Lys
 85 90 95
 Ser Lys Thr Asn Gly Ala Glu Asn Glu Thr Leu Thr Leu Ala Glu Tyr
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 His Glu Gln Glu Glu Ile Phe Lys Leu Arg Leu Gly His Leu Lys Lys
 115 120 125
 Glu Glu Ala Glu Ile Gln Ala Glu Leu Glu Arg Leu Glu Arg Val Arg
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 Asn Leu His Ile Arg Glu Leu Lys Arg Ile His Asn Glu Asp Asn Ser
 145 150 155 160
 Gln Phe Lys Asp His Pro Thr Leu Asn Asp Arg Tyr Leu Leu Leu His
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 Leu Leu Gly Arg Gly Gly Phe Ser Glu Val Tyr Lys Ala Phe Asp Leu
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 Thr Glu Gln Arg Tyr Val Ala Val Lys Ile His Gln Leu Asn Lys Asn
 195 200 205
 Trp Arg Asp Glu Lys Lys Glu Asn Tyr His Lys His Ala Cys Arg Glu
 210 215 220
 Tyr Arg Ile His Lys Glu Leu Asp His Pro Arg Ile Val Lys Leu Tyr

225 230 235 240
 Asp Tyr Phe Ser Leu Asp Thr Asp Ser Phe Cys Thr Val Leu Glu Tyr
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 Cys Glu Gly Asn Asp Leu Asp Phe Tyr Leu Lys Gln His Lys Leu Met
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 Lys Tyr Leu Asn Glu Ile Lys Pro Pro Ile Ile His Tyr Asp Leu Lys
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 Pro Gly Asn Ile Leu Leu Val Asn Gly Thr Ala Cys Gly Glu Ile Lys
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 Ile Thr Asp Phe Gly Leu Ser Lys Ile Met Asp Asp Asp Ser Tyr Asn
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 Ser Val Asp Gly Met Glu Leu Thr Ser Gln Gly Ala Gly Thr Tyr Trp
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 Tyr Leu Pro Pro Glu Cys Phe Val Val Gly Lys Glu Pro Pro Lys Ile
 355 360 365
 Ser Asn Lys Val Asp Val Trp Ser Val Gly Val Ile Phe Tyr Gln Cys
 370 375 380
 Leu Tyr Gly Arg Lys Pro Phe Gly His Asn Gln Ser Gln Gln Asp Ile
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 Leu Gln Glu Asn Thr Ile Leu Lys Ala Thr Glu Val Gln Phe Pro Pro
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 Lys Pro Val Val Thr Pro Glu Ala Lys Ala Phe Ser Arg Arg Cys Leu
 420 425 430
 Ala Tyr Arg Lys Glu Asp Arg Ile Asp Val Gln Gln Leu Ala Cys Asp
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<210> 459

<211> 72

<212> DNA

<213> Mus musculus

<400> 459

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<210> 460

<211> 2069

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<213> Mus musculus

<220>

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<222> (657).. (1979)

<400> 460

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 ccggagccag agtcgctttg gcittgcact gcaggaaagg gacttaggcg ctagagacga 300
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 cacttcagcg gtgagggagg acggagggcc tcggggactc taggttggcg gcgggaggcg 540
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 Val Gln Gln Thr Asn Asn Ala Glu Asn Thr Glu Ala Leu Leu Ala Gly

5

10

15

gag agc tcg gac tcg ggc gcc ggc ctg gag ctg ggc atc gcg tcc tcc 755
 Glu Ser Ser Asp Ser Gly Ala Gly Leu Glu Leu Gly Ile Ala Ser Ser

20

25

30

ccg acg cct ggc tcc acc gcg tcg acg ggc ggc aag gcg gac gac ccc 803
 Pro Thr Pro Gly Ser Thr Ala Ser Thr Gly Gly Lys Ala Asp Asp Pro

35

40

45

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50

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60

65

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70

75

80

ccc gac atg cac aac gcc gag atc tcc aag cgg cta ggc aaa cgc tgg 947
 Pro Asp Met His Asn Ala Glu Ile Ser Lys Arg Leu Gly Lys Arg Trp

85

90

95

aag ctg ctc aag gac agc gac aag att ccg ttc atc cag gag gcg gag 995
 Lys Leu Leu Lys Asp Ser Asp Lys Ile Pro Phe Ile Gln Glu Ala Glu

100

105

110

cgc ctg cgc ctc aag cac atg gct gac tac cct gac tac aag tac cgg 1043

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 Thr Ala Lys Pro Gly Glu Lys Gly Asp Lys Val Ala Gly Ser Ser Gly
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 cac gcg gga agc agc cac gcg ggg ggt ggc gcg ggc ggc acg tcc aag 1187
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 Gly Lys Pro His Ala Lys Leu Val Pro Ala Gly Gly Ser Lys Ala Ala
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 tcc tcc tcg ccg tcc agt gcg ctg gcc acc cca gcc aaa cac cct gcc 1427
 Ser Ser Ser Pro Ser Ser Ala Leu Ala Thr Pro Ala Lys His Pro Ala
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 gac aag aaa gtg aag cac gtc tac ctg ttt gga agc ctg ggc gct tcg 1475
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 260 265 270

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 Ser Pro Ala Asp His Arg Gly Tyr Ala Ser Leu Arg Ala Ala Ser Pro
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 Gly Ser Phe Ser Ser Ser Ser Ala Leu Asp Arg Asp Leu Asp Phe Asn
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 Phe Glu Pro Gly Ser Gly Ser His Phe Glu Phe Pro Asp Tyr Cys Thr
 405 410 415
 ccc gag gtg agc gag atg atc tcg gga gat tgg ctg gag tcc agc atc 1955
 Pro Glu Val Ser Glu Met Ile Ser Gly Asp Trp Leu Glu Ser Ser Ile

420 425 430
 tct aac ctg gtc ttc acc tac tga agggagcgcg ggccggggag aaggtgggcc 2009
 Ser Asn Leu Val Phe Thr Tyr

435 440
 aagaggcagg agaggagaga gggaaaaaag aaacaaaaaa caaacaaaaa aaaaaaaga 2069

<210> 461

<211> 440

<212> PRT

<213> Mus musculus

<400> 461

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 35 40 45
 Pro Ser Trp Cys Lys Thr Pro Ser Gly His Ile Lys Arg Pro Met Asn
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 Ala Phe Met Val Trp Ser Gln Ile Glu Arg Arg Lys Ile Met Glu Gln
 65 70 75 80
 Ser Pro Asp Met His Asn Ala Glu Ile Ser Lys Arg Leu Gly Lys Arg
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 Trp Lys Leu Leu Lys Asp Ser Asp Lys Ile Pro Phe Ile Gln Glu Ala
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 Glu Arg Leu Arg Leu Lys His Met Ala Asp Tyr Pro Asp Tyr Lys Tyr
 115 120 125
 Arg Pro Arg Lys Lys Val Lys Ser Gly Asn Ala Gly Ala Gly Ser Ala

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Gly His Ala Gly Ser Ser His Ala Gly Gly Gly Ala Gly Gly Thr Ser		
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Lys Pro Thr Pro Lys Lys Ser Cys Gly Pro Lys Val Ala Gly Ser Ser		
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Val Gly Lys Pro His Ala Lys Leu Val Pro Ala Gly Gly Ser Lys Ala		
195	200	205
Ala Ala Ser Phe Ser Pro Glu Gln Ala Ala Leu Leu Pro Leu Gly Glu		
210	215	220
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245	250	255
Ala Asp Lys Lys Val Lys His Val Tyr Leu Phe Gly Ser Leu Gly Ala		
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275	280	285
Pro Leu Gly Leu Tyr Glu Asp Gly Gly Pro Gly Cys Ser Pro Asp Gly		
290	295	300
Arg Ser Leu Ser Gly Arg Ser Ser Ala Ala Ser Ser Pro Ala Ala Ser		
305	310	315
Arg Ser Pro Ala Asp His Arg Gly Tyr Ala Ser Leu Arg Ala Ala Ser		
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Pro Ala Pro Ser Ser Ala Pro Ser His Ala Ser Ser Ser Leu Ser Ser		
340	345	350
Ser Ser Ser Ser Ser Ser Gly Ser Ser Ser Ser Asp Asp Glu Phe Glu		
355	360	365

Asp Asp Leu Leu Asp Leu Asn Pro Ser Ser Asn Phe Glu Ser Met Ser
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 Leu Gly Ser Phe Ser Ser Ser Ser Ala Leu Asp Arg Asp Leu Asp Phe
 385 390 395 400
 Asn Phe Glu Pro Gly Ser Gly Ser His Phe Glu Phe Pro Asp Tyr Cys
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<210> 462

<211> 10820

<212> DNA

<213> Mus musculus

<400> 462

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Ala Asp Cys Gln Lys Thr Val Thr Ile Ser Lys Pro Cys Gly Lys Leu
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Arg Leu Pro Ser Asp Gly Phe Leu Leu Leu Ala Leu Leu Leu Tyr Ala
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<210> 467

<211> 410

<212> PRT

<213> Mus musculus

<400> 467

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 35 40 45

Val Phe Leu Val Ser Cys Ala Leu Pro Asp Ser Val Leu Arg Arg Phe
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 Val Val Arg Thr Met Cys Ala Val Leu Gly Leu Val Ala Arg Gln Glu
 65 70 75 80
 Asp Ser Gly Leu Arg Asp His Arg Val Arg Val Leu Ile Ser Asn His
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 Val Thr Pro Phe Asp His Asn Ile Val Asn Leu Leu Thr Thr Cys Ser
 100 105 110
 Thr Pro Leu Leu Asn Ser Pro Pro Ser Phe Val Cys Trp Ser Arg Gly
 115 120 125
 Phe Met Glu Met Asp Arg Arg Val Glu Leu Val Glu Ser Leu Lys Lys
 130 135 140
 Phe Cys Ala Ser Thr Arg Leu Pro Pro Thr Pro Leu Leu Leu Phe Pro
 145 150 155 160
 Glu Glu Glu Ala Thr Asn Gly Arg Glu Gly Leu Leu Arg Phe Ser Ser
 165 170 175
 Trp Pro Phe Ser Ile Gln Asp Val Val Gln Pro Leu Thr Leu Gln Val
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 Gln Arg Pro Leu Val Ser Val Thr Val Ser Asp Ala Ser Trp Val Ser
 195 200 205
 Glu Leu Leu Trp Ser Leu Phe Val Pro Phe Thr Val Tyr Gln Val Arg
 210 215 220
 Trp Leu His Pro Ile Arg Arg Gln Leu Gly Glu Glu Ser Glu Glu Phe
 225 230 235 240
 Ala Leu Arg Val Gln Gln Leu Val Ala Lys Glu Leu Gly Gln Ile Gly
 245 250 255
 Thr Arg Leu Thr Pro Ala Asp Lys Ala Glu His Met Lys Arg Gln Arg
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 His Pro Arg Leu Arg Pro Gln Ser Val Gln Ser Ser Phe Pro Ser Pro

275 280 285
 Pro Ser Pro Ser Ser Asp Val Gln Leu Thr Thr Leu Ala His Arg Val
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 Lys Glu Val Leu Pro His Val Pro Leu Asn Val Ile Gln Arg Asp Leu
 305 310 315 320
 Ala Arg Thr Gly Cys Val Asp Leu Thr Ile Thr Asn Leu Leu Glu Gly
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 Ala Val Ala Phe Met Pro Glu Asp Val Thr Glu Gly Ser Gln Ser Pro
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 Pro Ala Pro Ser Ala Pro Lys Phe Pro Ser Ser Gly Leu Ala Thr Pro
 355 360 365
 Gln Pro Thr Ala Leu Thr Phe Ala Lys Ser Ser Trp Ala Arg Gln Glu
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<210> 468

<211> 151

<212> DNA

<213> Mus musculus

<400> 468

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<210> 469

<211> 2747

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (43).. (1689)

<400> 469

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Ala Thr Asn Pro Phe Asp Gln Asp Val Glu Lys Ala Thr Ser Glu Leu
   5              10              15              20
aat act gct gag gac tgg ggc ctc atc ttg gat att tgt gat aag gtt      150
Asn Thr Ala Glu Asp Trp Gly Leu Ile Leu Asp Ile Cys Asp Lys Val
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ggc caa tct cgc aca gga cct aaa gat tgt ctt cgt tcc att atg aga      198
Gly Gln Ser Arg Thr Gly Pro Lys Asp Cys Leu Arg Ser Ile Met Arg
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Arg Val Asn His Lys Asp Pro His Val Ala Met Gln Ala Leu Thr Leu
              55              60              65
ctg gga gca tgt gta tca aac tgt ggc aaa att ttt cac tta gaa gta      294
Leu Gly Ala Cys Val Ser Asn Cys Gly Lys Ile Phe His Leu Glu Val
              70              75              80
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Cys Ser Arg Asp Phe Ala Ser Glu Val Ser Asn Val Leu Asn Lys Gly

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Asp Glu Phe Lys Asn Asp Pro Gln Leu Ser Leu Ile Ser Ala Met Ile				
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Gly Thr Val Ala Thr Lys Lys Glu Glu Glu Asp Leu Ala Lys Ala Ile				
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Arg Lys Val Arg Ala Val Tyr Asp Phe Glu Ala Ala Glu Asp Asn Glu				
215	220	225		
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Leu Thr Phe Lys Ala Gly Glu Ile Ile Thr Val Leu Asp Asp Ser Asp				
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Ser	Asn	Phe	Val	Thr	Ala	Asp	Leu	Thr	Ala	Glu	Pro	Glu	Met	Ile	Lys
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aca	gag	aag	aag	acg	gta	cag	ttc	aat	gat	gat	gtt	cag	ata	gag	aca
Thr	Glu	Lys	Lys	Thr	Val	Gln	Phe	Asn	Asp	Asp	Val	Gln	Ile	Glu	Thr
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ata	gaa	cca	gaa	cca	gaa	cca	gcc	ttt	att	gat	gag	gat	aaa	atg	gac
Ile	Glu	Pro	Glu	Pro	Glu	Pro	Ala	Phe	Ile	Asp	Glu	Asp	Lys	Met	Asp
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Gln	Leu	Leu	Gln	Met	Leu	Gln	Ser	Thr	Asp	Pro	Ser	Asp	Asn	Gln	Pro
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Tyr Pro Gly Pro Ala Gln Ser Gly Thr Tyr Leu Val Ala Gly Ser Ala	
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Gln Met Thr His Leu Gln Ser Tyr Ser Leu Pro Pro Glu Gln Leu Ser	
425 430 435	
tct atc agc caa gga gca gtt cca tcc tct gca aat caa gct ctt cct	1398
Ser Ile Ser Gln Gly Ala Val Pro Ser Ser Ala Asn Gln Ala Leu Pro	
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Ser Gln Gln Thr Gln Ala Ser Tyr Pro Asn Ala Met Val Ser Ser Val	
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Gln Gly Asn Ser Tyr Pro Ser Gln Ala Ser Ile Tyr Ser Pro Pro Ala	
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Ala Asp Val Thr Ile Tyr Gln Asn Ala Gly Pro Thr Met Ser Gln Val	
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cca aac tat act tta aca tca tca acc ctg cct caa aca gga ggc agc	1638
Pro Asn Tyr Thr Leu Thr Ser Ser Thr Leu Pro Gln Thr Gly Gly Ser	
520 525 530	
caa cag cca cct cag cca cag caa gca tat tct cag aag gct ctg cta	1686
Gln Gln Pro Pro Gln Pro Gln Gln Ala Tyr Ser Gln Lys Ala Leu Leu	
535 540 545	
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<210> 470

<211> 548

<212> PRT

<213> Mus musculus

<400> 470

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Cys Asp Lys Val Gly Gln Ser Arg Thr Gly Pro Lys Asp Cys Leu Arg

35 40 45

Ser Ile Met Arg Arg Val Asn His Lys Asp Pro His Val Ala Met Gln
 50 55 60
 Ala Leu Thr Leu Leu Gly Ala Cys Val Ser Asn Cys Gly Lys Ile Phe
 65 70 75 80
 His Leu Glu Val Cys Ser Arg Asp Phe Ala Ser Glu Val Ser Asn Val
 85 90 95
 Leu Asn Lys Gly His Pro Lys Val Cys Glu Lys Leu Lys Ala Leu Met
 100 105 110
 Val Glu Trp Thr Asp Glu Phe Lys Asn Asp Pro Gln Leu Ser Leu Ile
 115 120 125
 Ser Ala Met Ile Lys Asn Leu Lys Glu Gln Gly Val Thr Phe Pro Ala
 130 135 140
 Ile Gly Ser Gln Ala Ala Glu Gln Ala Lys Ala Ser Pro Ala Leu Val
 145 150 155 160
 Ala Lys Asp Pro Gly Thr Val Ala Thr Lys Lys Glu Glu Glu Asp Leu
 165 170 175
 Ala Lys Ala Ile Glu Leu Ser Leu Lys Glu Gln Arg Gln Gln Ser Ala
 180 185 190
 Pro Val Ser Thr Leu Tyr Pro Ser Thr Ser Asn Leu Leu Thr Asn His
 195 200 205
 Gln His Glu Gly Arg Lys Val Arg Ala Val Tyr Asp Phe Glu Ala Ala
 210 215 220
 Glu Asp Asn Glu Leu Thr Phe Lys Ala Gly Glu Ile Ile Thr Val Leu
 225 230 235 240
 Asp Asp Ser Asp Pro Asn Trp Trp Lys Gly Glu Thr His Gln Gly Val
 245 250 255
 Gly Leu Phe Pro Ser Asn Phe Val Thr Ala Asp Leu Thr Ala Glu Pro
 260 265 270
 Glu Met Ile Lys Thr Glu Lys Lys Thr Val Gln Phe Asn Asp Asp Val

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Asp Lys Met Asp Gln Leu Leu Gln Met Leu Gln Ser Thr Asp Pro Ser		
305	310	315
Asp Asn Gln Pro Asp Leu Pro Glu Leu Leu His Leu Glu Ala Met Cys		
325	330	335
His Gln Met Gly Pro Leu Ile Asp Glu Lys Leu Glu Asp Ile Asp Arg		
340	345	350
Lys His Ser Glu Leu Ser Glu Leu Asn Val Lys Val Met Glu Ala Leu		
355	360	365
Ser Leu Tyr Thr Lys Leu Met Asn Glu Asp Pro Met Tyr Ser Met Tyr		
370	375	380
Ala Lys Leu Gln Ser Gln Gln Tyr Tyr Leu Gln Ser Ser Ala Val Ser		
385	390	395
Ala Ser Gln Val Tyr Pro Gly Pro Ala Gln Ser Gly Thr Tyr Leu Val		
405	410	415
Ala Gly Ser Ala Gln Met Thr His Leu Gln Ser Tyr Ser Leu Pro Pro		
420	425	430
Glu Gln Leu Ser Ser Ile Ser Gln Gly Ala Val Pro Ser Ser Ala Asn		
435	440	445
Gln Ala Leu Pro Ser Gln Gln Thr Gln Ala Ser Tyr Pro Asn Ala Met		
450	455	460
Val Ser Ser Val Gln Gly Asn Ser Tyr Pro Ser Gln Ala Ser Ile Tyr		
465	470	475
Ser Pro Pro Ala Ala Ala Ala Ala Ala Ala Ala Ala Val Val Pro		
485	490	495
Val Pro Val Pro Ala Asp Val Thr Ile Tyr Gln Asn Ala Gly Pro Thr		
500	505	510

Met Ser Gln Val Pro Asn Tyr Thr Leu Thr Ser Ser Thr Leu Pro Gln

515

520

525

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530

535

540

Lys Ala Leu Leu

545

<210> 471

<211> 453

<212> DNA

<213> Mus musculus

<400> 471

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<210> 472

<211> 328

<212> DNA

<213> Mus musculus

<400> 472

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<210> 473

<211> 3170

<212> DNA

<213> Mus musculus

<400> 473

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<210> 474

<211> 471

<212> DNA

<213> Mus musculus

<400> 474

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<210> 475

<211> 2183

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (187).. (1386)

<400> 475

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      Met Ala Ala Arg Pro Gly Leu Leu Trp Leu Leu Gly Leu Ala
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ctg tgc gtg ttg ggc ggc ggt cac ctc tgc cat ccc ccg cac gtc ttt 276
Leu Cys Val Leu Gly Gly Gly His Leu Ser His Pro Pro His Val Phe
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ccc cag cgt cga cta gga gta cgc gag ccc cgc gac atg cag cgc gag 324
Pro Gln Arg Arg Leu Gly Val Arg Glu Pro Arg Asp Met Gln Arg Glu
            35             40             45
att cgg gag gtg ctg ggg ctg ccg ggg cgg ccc cga tcc cga gca ccg 372
Ile Arg Glu Val Leu Gly Leu Pro Gly Arg Pro Arg Ser Arg Ala Pro
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gtc ggg gct gcc cag cag cca gcg tct gcg ccc ctc ttt atg ttg gac 420
Val Gly Ala Ala Gln Gln Pro Ala Ser Ala Pro Leu Phe Met Leu Asp
            65             70             75
ctg tac cgt gcc atg acg gat gac agt ggc ggt ggg acc ccg cag cct 468
Leu Tyr Arg Ala Met Thr Asp Asp Ser Gly Gly Gly Thr Pro Gln Pro
            80             85             90
cac ttg gac cgt gct gac ctg att atg agc ttt gtc aac ata gtg gaa 516
His Leu Asp Arg Ala Asp Leu Ile Met Ser Phe Val Asn Ile Val Glu
            95             100             105             110
cgc gac cgt acc ctg ggc tac cag gag cca cac tgg aag gaa ttc cac 564

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Phe	Asp	Leu	Thr	Gln	Ile	Pro	Ala	Gly	Glu	Ala	Val	Thr	Ala	Ala	Glu		
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Phe	Arg	Ile	Tyr	Lys	Glu	Pro	Ser	Thr	His	Pro	Leu	Asn	Thr	Thr	Phe		
				145				150					155				
cac	atc	agc	atg	ttc	gaa	gtg	gtc	caa	gag	cac	tcc	aac	agg	gag	tct	708	
His	Ile	Ser	Met	Phe	Glu	Val	Val	Gln	Glu	His	Ser	Asn	Arg	Glu	Ser		
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gac	ttg	tcc	ttt	ttg	gat	ctt	cag	acg	ctc	cga	tct	ggg	gac	gag	ggc	756	
Asp	Leu	Ser	Phe	Leu	Asp	Leu	Gln	Thr	Leu	Arg	Ser	Gly	Asp	Glu	Gly		
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tgg	ctg	gtg	ctg	gac	atc	aca	gca	gcc	agt	gac	cga	tgg	ctg	ctg	aac	804	
Trp	Leu	Val	Leu	Asp	Ile	Thr	Ala	Ala	Ser	Asp	Arg	Trp	Leu	Leu	Asn		
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cat	cac	aag	gac	cta	gga	ctc	cgc	ctc	tat	gtg	gaa	acc	gag	gat	ggg	852	
His	His	Lys	Asp	Leu	Gly	Leu	Arg	Leu	Tyr	Val	Glu	Thr	Glu	Asp	Gly		
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cac	ggc	ata	gat	cct	ggc	cta	gct	ggt	ctg	ctt	gga	cga	caa	gca	cca	900	
His	Gly	Ile	Asp	Pro	Gly	Leu	Ala	Gly	Leu	Leu	Gly	Arg	Gln	Ala	Pro		
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Arg	Ser	Arg	Gln	Pro	Phe	Met	Val	Gly	Phe	Phe	Arg	Ala	Asn	Gln	Ser		
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Pro	Val	Arg	Ala	Pro	Arg	Thr	Ala	Arg	Pro	Leu	Lys	Lys	Lys	Gln	Leu		
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 Asn Gln Ile Asn Gln Leu Pro His Ser Asn Lys His Leu Gly Ile Leu
 275 280 285
 gat gat ggc cac ggt tct cac ggc aga gaa gtt tgc cgc aca ggt gag 1092
 Asp Asp Gly His Gly Ser His Gly Arg Glu Val Cys Arg Thr Gly Glu
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 ctc tat gtc agc ttc cgt gac ctt ggc tgg ctg gac tct gtc att gcc 1140
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 305 310 315
 ccc cag ggc tac tcc gcc tat tac tgt gct ggg gag tgc atc tac cca 1188
 Pro Gln Gly Tyr Ser Ala Tyr Tyr Cys Ala Gly Glu Cys Ile Tyr Pro
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 ctg aac tcc tgt atg aac tcc acc aac cac gcc act atg cag gcc ctg 1236
 Leu Asn Ser Cys Met Asn Ser Thr Asn His Ala Thr Met Gln Ala Leu
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 Val His Leu Met Lys Pro Asp Ile Ile Pro Lys Val Cys Cys Val Pro
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 act gag ctg agt gcc att tct ctg ctc tac tat gat aga aac aat aat 1332
 Thr Glu Leu Ser Ala Ile Ser Leu Leu Tyr Tyr Asp Arg Asn Asn Asn
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 gtc atc ctg cgc agg gag cgc aac atg gta gtc cag gcc tgt ggc tgc 1380
 Val Ile Leu Arg Arg Glu Arg Asn Met Val Val Gln Ala Cys Gly Cys
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<210> 476

<211> 399

<212> PRT

<213> Mus musculus

<400> 476

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Arg	Arg	Leu	Gly	Val	Arg	Glu	Pro	Arg	Asp	Met	Gln	Arg	Glu	Ile	Arg
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Ala	Ala	Gln	Gln	Pro	Ala	Ser	Ala	Pro	Leu	Phe	Met	Leu	Asp	Leu	Tyr
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Arg	Ala	Met	Thr	Asp	Asp	Ser	Gly	Gly	Gly	Thr	Pro	Gln	Pro	His	Leu

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Arg Thr Leu Gly Tyr Gln Glu Pro His Trp Lys Glu Phe His Phe Asp					
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Leu Thr Gln Ile Pro Ala Gly Glu Ala Val Thr Ala Ala Glu Phe Arg					
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Ile Tyr Lys Glu Pro Ser Thr His Pro Leu Asn Thr Thr Phe His Ile					
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Ser Met Phe Glu Val Val Gln Glu His Ser Asn Arg Glu Ser Asp Leu					
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Ser Phe Leu Asp Leu Gln Thr Leu Arg Ser Gly Asp Glu Gly Trp Leu					
	180		185		190
Val Leu Asp Ile Thr Ala Ala Ser Asp Arg Trp Leu Leu Asn His His					
	195		200		205
Lys Asp Leu Gly Leu Arg Leu Tyr Val Glu Thr Glu Asp Gly His Gly					
	210		215		220
Ile Asp Pro Gly Leu Ala Gly Leu Leu Gly Arg Gln Ala Pro Arg Ser					
	225		230		235
Arg Gln Pro Phe Met Val Gly Phe Phe Arg Ala Asn Gln Ser Pro Val					
	245		250		255
Arg Ala Pro Arg Thr Ala Arg Pro Leu Lys Lys Lys Gln Leu Asn Gln					
	260		265		270
Ile Asn Gln Leu Pro His Ser Asn Lys His Leu Gly Ile Leu Asp Asp					
	275		280		285
Gly His Gly Ser His Gly Arg Glu Val Cys Arg Thr Gly Glu Leu Tyr					
	290		295		300
Val Ser Phe Arg Asp Leu Gly Trp Leu Asp Ser Val Ile Ala Pro Gln					
	305		310		315
					320

Gly Tyr Ser Ala Tyr Tyr Cys Ala Gly Glu Cys Ile Tyr Pro Leu Asn
325 330 335

Ser Cys Met Asn Ser Thr Asn His Ala Thr Met Gln Ala Leu Val His
340 345 350

Leu Met Lys Pro Asp Ile Ile Pro Lys Val Cys Cys Val Pro Thr Glu
355 360 365

Leu Ser Ala Ile Ser Leu Leu Tyr Tyr Asp Arg Asn Asn Asn Val Ile
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<213> Mus musculus

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<400> 477

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Met Phe Ser

1

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Phe Asn Met Phe Asp His Pro Ile Pro Arg Val Phe Gln Asn Arg Phe
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tcc acg cag tac cgc tgc ttc tcc gtg tcc atg cta gca ggg cct aat 211

Ser Thr Gln Tyr Arg Cys Phe Ser Val Ser Met Leu Ala Gly Pro Asn
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 gac agg tca gat gtg gag aaa gga ggg aag ata att atg cca ccc tca 259
 Asp Arg Ser Asp Val Glu Lys Gly Gly Lys Ile Ile Met Pro Pro Ser
 40 45 50
 gcc ctc gat caa ctc agc cgg ctc aac att acc tat cct atg ctg ttt 307
 Ala Leu Asp Gln Leu Ser Arg Leu Asn Ile Thr Tyr Pro Met Leu Phe
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 Lys Leu Thr Asn Lys Asn Ser Asp Arg Met Thr His Cys Gly Val Leu
 70 75 80
 gag ttt gtt gct gat gaa ggc atc tgt tac ctc ccc cac tgg atg atg 403
 Glu Phe Val Ala Asp Glu Gly Ile Cys Tyr Leu Pro His Trp Met Met
 85 90 95
 cag aat tlg ctg ttg gag gaa ggg ggc ctg gtt cag gtg gaa agt gtc 451
 Gln Asn Leu Leu Leu Glu Glu Gly Gly Leu Val Gln Val Glu Ser Val
 100 105 110 115
 aac ctc caa gtg gcg acc tac tct aag ttc cag cct cag agc cca gac 499
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 120 125 130
 ttc ctg gat att acc aac cct aaa gcg gta tta gaa aat gca ttg aga 547
 Phe Leu Asp Ile Thr Asn Pro Lys Ala Val Leu Glu Asn Ala Leu Arg
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 Glu Lys Ile Tyr Glu Leu Arg Val Met Glu Thr Lys Pro Asp Lys Ala
 165 170 175

gta tcc att att gaa tgt gac atg aat gtg gat ttt gat gct ccc ttg 691
 Val Ser Ile Ile Glu Cys Asp Met Asn Val Asp Phe Asp Ala Pro Leu
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 Gly Tyr Lys Glu Pro Lys Arg Pro Val Gln His Glu Glu Ser Ile Glu
 200 205 210
 gga gaa gct gac cac agt ggc tat gcc gga gaa gtg ggc ttc cgt gcc 787
 Gly Glu Ala Asp His Ser Gly Tyr Ala Gly Glu Val Gly Phe Arg Ala
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 Phe Ser Gly Ser Gly Asn Arg Leu Asp Gly Lys Lys Lys Gly Val Glu
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 ccc agt ccc tcc cca atc aag cct gga gac atc aaa aga gga att cct 883
 Pro Ser Pro Ser Pro Ile Lys Pro Gly Asp Ile Lys Arg Gly Ile Pro
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 Pro Leu Val Lys Lys Val Glu Glu Asp Glu Ala Gly Gly Arg Phe Val
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<211> 307

<212> PRT

<213> Mus musculus

<400> 478

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 Pro Pro Ser Ala Leu Asp Gln Leu Ser Arg Leu Asn Ile Thr Tyr Pro
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 Met Leu Phe Lys Leu Thr Asn Lys Asn Ser Asp Arg Met Thr His Cys
 65 70 75 80
 Gly Val Leu Glu Phe Val Ala Asp Glu Gly Ile Cys Tyr Leu Pro His
 85 90 95
 Trp Met Met Gln Asn Leu Leu Leu Glu Glu Gly Gly Leu Val Gln Val
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 Glu Ser Val Asn Leu Gln Val Ala Thr Tyr Ser Lys Phe Gln Pro Gln
 115 120 125
 Ser Pro Asp Phe Leu Asp Ile Thr Asn Pro Lys Ala Val Leu Glu Asn
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 Ala Leu Arg Asn Phe Ala Cys Met Thr Thr Gly Asp Val Ile Ala Ile

145 150 155 160
 Asn Tyr Asn Glu Lys Ile Tyr Glu Leu Arg Val Met Glu Thr Lys Pro
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 Asp Lys Ala Val Ser Ile Ile Glu Cys Asp Met Asn Val Asp Phe Asp
 180 185 190
 Ala Pro Leu Gly Tyr Lys Glu Pro Lys Arg Pro Val Gln His Glu Glu
 195 200 205
 Ser Ile Glu Gly Glu Ala Asp His Ser Gly Tyr Ala Gly Glu Val Gly
 210 215 220
 Phe Arg Ala Phe Ser Gly Ser Gly Asn Arg Leu Asp Gly Lys Lys Lys
 225 230 235 240
 Gly Val Glu Pro Ser Pro Ser Pro Ile Lys Pro Gly Asp Ile Lys Arg
 245 250 255
 Gly Ile Pro Asn Tyr Glu Phe Lys Leu Gly Lys Ile Thr Phe Ile Arg
 260 265 270
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<210> 479

<211> 6730

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (580).. (6234)

<400> 479

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tgtgagagct gatcttgaag agtggactaa tacatagagg agctgtcccc cagcctcacc 540
cctgtaggga tggagcagag gaggttctat ctgcgggcc atg cag gct gac aac 594

Met Gln Ala Asp Asn

1

5

ctg tct gtg gtt ctg ctc tca gtg gcc tgg ctc ctg cta gct cgt ggg 642
Leu Ser Val Val Leu Leu Ser Val Ala Trp Leu Leu Leu Ala Arg Gly

10

15

20

acc aca ggt atg cct cag tac agc act ttc cac tct gag aat cgt gac 690
Thr Thr Gly Met Pro Gln Tyr Ser Thr Phe His Ser Glu Asn Arg Asp

25

30

35

tgg act ttc aac cat ttg act gta cac cga aga aca ggg gct gtg tat 738
Trp Thr Phe Asn His Leu Thr Val His Arg Arg Thr Gly Ala Val Tyr

40

45

50

gtg ggg gct atc aat cgt gtc tac aag ttg act ggc aac ctc acc atc 786
Val Gly Ala Ile Asn Arg Val Tyr Lys Leu Thr Gly Asn Leu Thr Ile

55

60

65

cag gtg gct cac aag aca ggg cca gaa gag gac aac aag gct tgc tac 834
Gln Val Ala His Lys Thr Gly Pro Glu Glu Asp Asn Lys Ala Cys Tyr

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Pro Pro Leu Ile Val Gln Pro Cys Ser Glu Val Leu Thr Leu Thr Asn				
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aat gtc aac aaa cta ctg atc att gac tac tct gag aat cgc ctg ctg	930			
Asn Val Asn Lys Leu Leu Ile Ile Asp Tyr Ser Glu Asn Arg Leu Leu				
105	110	115		
gcc tgc gga agc ctc tac cag ggt gtt tgc aag ctc ctg cga cta gat	978			
Ala Cys Gly Ser Leu Tyr Gln Gly Val Cys Lys Leu Leu Arg Leu Asp				
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Asp Leu Phe Ile Leu Val Glu Pro Ser His Lys Lys Glu His Tyr Leu				
135	140	145		
tcc agt gtc aat aag aca ggc acc atg tat ggt gtg att gtg cgc tct	1074			
Ser Ser Val Asn Lys Thr Gly Thr Met Tyr Gly Val Ile Val Arg Ser				
150	155	160	165	
gag ggg gaa gat ggc aag ctt ttt atc ggc act gct gtg gat ggc aag	1122			
Glu Gly Glu Asp Gly Lys Leu Phe Ile Gly Thr Ala Val Asp Gly Lys				
170	175	180		
cag gat tac ttc cct act ctg tcc agc cgc aag ctg ccc cgt gac cct	1170			
Gln Asp Tyr Phe Pro Thr Leu Ser Ser Arg Lys Leu Pro Arg Asp Pro				
185	190	195		
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Ser Leu Ile Lys Ile Pro Ser Asp Thr Leu Ala Leu Val Ser His Phe				
215	220	225		
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 Gly Asp Leu Phe Tyr Thr Ser Arg Ile Val Arg Leu Cys Lys Asp Asp
 265 270 275
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 Pro Lys Phe His Ser Tyr Val Ser Leu Pro Phe Gly Cys Thr Arg Ala
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 Phe Ala Ile Phe Ser Lys Gly Gln Lys Gln Tyr His His Pro Pro Asp
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 gac tct gcc ctc tgt gcc ttc ccc atc cgg gcc atc aac ttg caa atc 1650
 Asp Ser Ala Leu Cys Ala Phe Pro Ile Arg Ala Ile Asn Leu Gln Ile
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 aag gag cgg ttg cag tcc tgc tac cac gga gag ggc aac ttg gag ctc 1698
 Lys Glu Arg Leu Gln Ser Cys Tyr His Gly Glu Gly Asn Leu Glu Leu
 360 365 370
 aac tgg ctg ctg gga aag gat gtg cag tgc acc aag gcg cct gtc cca 1746
 Asn Trp Leu Leu Gly Lys Asp Val Gln Cys Thr Lys Ala Pro Val Pro
 375 380 385

1276/2644

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Met Ser Leu Glu Val His Pro Asn Ser Ile Ser Val Ser Asp His Ser			
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cgg ctg ctc agc ctg gtt gtg aat gat gct ccc aac ctc tct gaa ggt	2322		
Arg Leu Leu Ser Leu Val Val Asn Asp Ala Pro Asn Leu Ser Glu Gly			
570	575	580	
att gct tgt gcc ttt ggg aat ctg act gag gtg gag gga cag gta tct	2370		
Ile Ala Cys Ala Phe Gly Asn Leu Thr Glu Val Glu Gly Gln Val Ser			
585	590	595	
ggg agt caa gtc atc tgc atc tca cct gga ccc aag gat gtc cct gtc	2418		
Gly Ser Gln Val Ile Cys Ile Ser Pro Gly Pro Lys Asp Val Pro Val			
600	605	610	
atc cct ctg gat caa gac tgg ttt ggc cta gag ctg cag ctg aga tcc	2466		
Ile Pro Leu Asp Gln Asp Trp Phe Gly Leu Glu Leu Gln Leu Arg Ser			
615	620	625	
aaa gag aca gga aag atc ttt gtc agc acc gaa ttc aag ttc tat aac	2514		
Lys Glu Thr Gly Lys Ile Phe Val Ser Thr Glu Phe Lys Phe Tyr Asn			
630	635	640	645
tgc agt gcc cac caa ctg tgc ctg tcc tgt gtt aac agc gcc ttc cgc	2562		
Cys Ser Ala His Gln Leu Cys Leu Ser Cys Val Asn Ser Ala Phe Arg			
650	655	660	
tgc cat tgg tgc aag tac cgt aac ctc tgc aca cat gac ccc act acc	2610		
Cys His Trp Cys Lys Tyr Arg Asn Leu Cys Thr His Asp Pro Thr Thr			
665	670	675	
tgt tcc ttc cag gaa ggc agg atc aat gtt tca gag gac tgt ccc cag	2658		
Cys Ser Phe Gln Glu Gly Arg Ile Asn Val Ser Glu Asp Cys Pro Gln			
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Leu Val Pro Thr Glu Glu Ile Leu Ile Pro Val Gly Glu Val Lys Pro
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 Ile Thr Leu Lys Ala Arg Asn Leu Pro Gln Pro Gln Ser Gly Gln Arg
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 Ala Leu Arg Phe Asn Ser Ser Ser Val Gln Cys Gln Asn Ser Ser Tyr
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 Gln Tyr Asp Gly Met Asp Ile Ser Asn Leu Ala Val Asp Phe Ala Val
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 Val Trp Asn Gly Asn Phe Ile Ile Asp Asn Pro Gln Asp Leu Lys Val
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 His Leu Tyr Lys Cys Ala Ala Gln Arg Glu Ser Cys Gly Leu Cys Leu
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 Lys Ala Asp His Lys Phe Glu Cys Gly Trp Cys Ser Gly Glu Arg Arg
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 Cys Thr Leu His Gln His Cys Pro Ser Thr Ser Ser Pro Trp Leu Asp
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 Trp Ser Ser His Asn Val Lys Cys Ser Asn Pro Gln Ile Thr Glu Ile
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 Leu Thr Val Ser Gly Pro Pro Glu Gly Gly Thr Arg Val Thr Ile His
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 Gly Val Asn Leu Gly Leu Asp Phe Ser Glu Ile Ala His His Val Gln
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Pro Arg Val Arg Val Lys Phe Asn Gly Lys Glu Ser Val Asn Val Cys			
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Lys Phe Ile Tyr Tyr Pro Asn Pro Thr Phe Glu Leu Leu Ser Pro Thr			
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Gly Ile Leu Asp Gln Lys Pro Gly Ser Pro Ile Ile Leu Lys Gly Lys			
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 Met Ile Gly Glu Thr Pro Cys Thr Val Thr Val Ser Glu Thr Gln Leu
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Cys Val Asn Pro Asp Asn Glu Asn Ser Pro Glu Ile Pro Val Lys Val			
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Val Tyr Lys Asn Val Pro Tyr Ser Gln Arg Pro Arg Ala Val Asp Met			
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Glu Asp Ile Thr Thr Lys Ile Glu Gly Asp Trp Lys Arg Leu Asn Thr			
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Leu Met His Tyr Gln Val Ser Asp Arg Ser Val Val Ala Leu Val Pro			
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Lys Gln Thr Ser Ser Tyr Asn Ile Pro Ala Ser Ala Ser Ile Ser Arg			
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Thr Ser Ile Ser Arg Tyr Asp Ser Ser Phe Arg Tyr Thr Gly Ser Pro			
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 Lys Asn Trp Val Glu Arg Tyr Tyr Ala Asp Ile Ala Lys Leu Pro Ala
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 Ile Ser Asp Gln Asp Met Asn Ala Tyr Leu Ala Glu Gln Ser Arg Leu
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 His Ala Thr Glu Phe Asn Met Leu Ser Ala Leu Asn Glu Ile Tyr Ser
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 Tyr Val Ser Lys Tyr Ser Glu Glu Leu Ile Gly Ala Leu Glu Gln Asp
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 1865 1870 1875
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<211> 1884

<212> PRT

<213> Mus musculus

<400> 480

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              20              25              30
Ser Glu Asn Arg Asp Trp Thr Phe Asn His Leu Thr Val His Arg Arg
              35              40              45
Thr Gly Ala Val Tyr Val Gly Ala Ile Asn Arg Val Tyr Lys Leu Thr
              50              55              60
Gly Asn Leu Thr Ile Gln Val Ala His Lys Thr Gly Pro Glu Glu Asp
              65              70              75              80
Asn Lys Ala Cys Tyr Pro Pro Leu Ile Val Gln Pro Cys Ser Glu Val
              85              90              95
Leu Thr Leu Thr Asn Asn Val Asn Lys Leu Leu Ile Ile Asp Tyr Ser
              100             105             110
Glu Asn Arg Leu Leu Ala Cys Gly Ser Leu Tyr Gln Gly Val Cys Lys
              115             120             125
Leu Leu Arg Leu Asp Asp Leu Phe Ile Leu Val Glu Pro Ser His Lys
              130             135             140
Lys Glu His Tyr Leu Ser Ser Val Asn Lys Thr Gly Thr Met Tyr Gly
              145             150             155             160
Val Ile Val Arg Ser Glu Gly Glu Asp Gly Lys Leu Phe Ile Gly Thr
              165             170             175

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Ala Val Asp Gly Lys Gln Asp Tyr Phe Pro Thr Leu Ser Ser Arg Lys
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 Leu Pro Arg Asp Pro Glu Ser Ser Ala Met Leu Asp Tyr Glu Leu His
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 Ser Asp Phe Val Ser Ser Leu Ile Lys Ile Pro Ser Asp Thr Leu Ala
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 Leu Val Ser His Phe Asp Ile Phe Tyr Ile Tyr Gly Phe Ala Ser Gly
 225 230 235 240
 Gly Phe Val Tyr Phe Leu Thr Val Gln Pro Glu Thr Pro Asp Gly Met
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 Ala Ile Asn Ser Ala Gly Asp Leu Phe Tyr Thr Ser Arg Ile Val Arg
 260 265 270
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 Gly Cys Thr Arg Ala Gly Val Glu Tyr Arg Leu Leu Gln Ala Ala Tyr
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 Leu Ala Lys Pro Gly Glu Ala Leu Ala Gln Ala Phe Asn Ile Ser Ser
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 Lys Ala Pro Val Pro Ile Asp Asp Asn Phe Cys Gly Leu Asp Ile Asn
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 Gln Pro Leu Gly Gly Ser Thr Pro Val Glu Gly Leu Thr Leu Tyr Thr

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Tyr Ser Val Val Phe Val Gly Thr Lys Ser Gly Lys Leu Lys Lys Ile					
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Arg Ala Asp Gly Pro Pro His Gly Gly Val Gln Tyr Glu Met Val Ser					
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Val Phe Lys Asp Gly Ser Pro Ile Leu Arg Asp Met Ala Phe Ser Ile					
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Pro Val Glu Ser Cys Glu Gln Tyr Thr Thr Cys Gly Glu Cys Leu Ser					
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Ser Gly Asp Pro His Cys Gly Trp Cys Ala Leu His Asn Met Cys Ser					
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Glu Gly Gln Val Ser Gly Ser Gln Val Ile Cys Ile Ser Pro Gly Pro					
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	610		615		620
Leu Gln Leu Arg Ser Lys Glu Thr Gly Lys Ile Phe Val Ser Thr Glu					
625		630		635	640

Phe Lys Phe Tyr Asn Cys Ser Ala His Gln Leu Cys Leu Ser Cys Val
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 Asn Ser Ala Phe Arg Cys His Trp Cys Lys Tyr Arg Asn Leu Cys Thr
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 His Asp Pro Thr Thr Cys Ser Phe Gln Glu Gly Arg Ile Asn Val Ser
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 Gln Ile Thr Glu Ile Leu Thr Val Ser Gly Pro Pro Glu Gly Gly Thr
 850 855 860
 Arg Val Thr Ile His Gly Val Asn Leu Gly Leu Asp Phe Ser Glu Ile

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Pro Glu Phe Met Thr Lys Ser His Gln Gln Tyr Thr Phe Val Asn Pro			
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Asn Lys Asn His Pro Lys Leu Leu Leu Arg Arg Thr Glu Ser Val Ala			
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Glu Lys Met Leu Thr Asn Trp Phe Ala Phe Leu Leu His Lys Phe Leu			
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Gln Gln Met Glu Lys Gly Pro Ile Asp Ala Ile Thr Gly Glu Ala Arg			
1460	1465	1470	
Tyr Ser Leu Ser Glu Asp Lys Leu Ile Arg Gln Gln Ile Glu Tyr Lys			
1475	1480	1485	
Thr Leu Ile Leu Asn Cys Val Asn Pro Asp Asn Glu Asn Ser Pro Glu			
1490	1495	1500	
Ile Pro Val Lys Val Leu Asn Cys Asp Thr Ile Thr Gln Val Lys Glu			
505	1510	1515	1520
Lys Ile Leu Asp Ala Val Tyr Lys Asn Val Pro Tyr Ser Gln Arg Pro			
1525	1530	1535	
Arg Ala Val Asp Met Asp Leu Glu Trp Arg Gln Gly Arg Ile Ala Arg			
1540	1545	1550	
Val Val Leu Gln Asp Glu Asp Ile Thr Thr Lys Ile Glu Gly Asp Trp			
1555	1560	1565	

Lys Arg Leu Asn Thr Leu Met His Tyr Gln Val Ser Asp Arg Ser Val
 1570 1575 1580
 Val Ala Leu Val Pro Lys Gln Thr Ser Ser Tyr Asn Ile Pro Ala Ser
 585 1590 1595 1600
 Ala Ser Ile Ser Arg Thr Ser Ile Ser Arg Tyr Asp Ser Ser Phe Arg
 1605 1610 1615
 Tyr Thr Gly Ser Pro Asp Ser Leu Arg Ser Arg Val Pro Met Ile Thr
 1620 1625 1630
 Pro Asp Leu Glu Ser Gly Val Lys Val Trp His Leu Val Lys Asn His
 1635 1640 1645
 Asp His Gly Asp Gln Lys Glu Gly Asp Arg Gly Ser Lys Met Val Ser
 1650 1655 1660
 Glu Ile Tyr Leu Thr Arg Leu Leu Ala Thr Lys Gly Thr Leu Gln Lys
 665 1670 1675 1680
 Phe Val Asp Asp Leu Phe Glu Thr Leu Phe Ser Thr Val His Arg Gly
 1685 1690 1695
 Ser Ala Leu Pro Leu Ala Ile Lys Tyr Met Phe Asp Phe Leu Asp Glu
 1700 1705 1710
 Gln Ala Asp Arg His Ser Ile His Asp Thr Asp Val Arg His Thr Trp
 1715 1720 1725
 Lys Ser Asn Cys Leu Pro Leu Arg Phe Trp Val Asn Val Ile Lys Asn
 1730 1735 1740
 Pro Gln Phe Val Phe Asp Ile His Lys Gly Ser Ile Thr Asp Ala Cys
 745 1750 1755 1760
 Leu Ser Val Val Ala Gln Thr Phe Met Asp Ser Cys Ser Thr Ser Glu
 1765 1770 1775
 His Arg Leu Gly Lys Asp Ser Pro Ser Asn Lys Leu Leu Tyr Ala Lys
 1780 1785 1790
 Asp Ile Pro Ser Tyr Lys Asn Trp Val Glu Arg Tyr Tyr Ala Asp Ile

1795 1800 1805
 Ala Lys Leu Pro Ala Ile Ser Asp Gln Asp Met Asn Ala Tyr Leu Ala
 1810 1815 1820
 Glu Gln Ser Arg Leu His Ala Thr Glu Phe Asn Met Leu Ser Ala Leu
 825 1830 1835 1840
 Asn Glu Ile Tyr Ser Tyr Val Ser Lys Tyr Ser Glu Glu Leu Ile Gly
 1845 1850 1855
 Ala Leu Glu Gln Asp Glu Gln Ala Arg Arg Gln Arg Leu Ala Tyr Lys
 1860 1865 1870
 Val Glu His Leu Ile Asn Ala Met Ser Ile Glu Ser
 1875 1880

<210> 481

<211> 1191

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (104).. (889)

<400> 481

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 attagcttgg ttctttttgt atgtttaaga ataagcctgc acg atg gac tgg ggg 115

Met Asp Trp Gly

1

acc ctg cac acc gtc atc ggt ggc gtg aac aag cac tct acc agc ata 163
 Thr Leu His Thr Val Ile Gly Gly Val Asn Lys His Ser Thr Ser Ile

5

10

15

20

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ggg aag gtg tgg atc acg gtc atc ttt att ttc cga gtc atg atc cta 211
Gly Lys Val Trp Ile Thr Val Ile Phe Ile Phe Arg Val Met Ile Leu
      25              30              35

gtg gtg gct gcc cag gaa gtg tgg ggt gat gag cag gag gac ttt gtc 259
Val Val Ala Ala Gln Glu Val Trp Gly Asp Glu Gln Glu Asp Phe Val
      40              45              50

tgc aac act ctg cag cca ggg tgc aag aac gtc tgc tat gac cat ttc 307
Cys Asn Thr Leu Gln Pro Gly Cys Lys Asn Val Cys Tyr Asp His Phe
      55              60              65

ttc ccg gtg tct cac atc cgg ctc tgg gcc ctg cag ctg atc ttt gtg 355
Phe Pro Val Ser His Ile Arg Leu Trp Ala Leu Gln Leu Ile Phe Val
      70              75              80

tct acc cca gcc ctg tlg gtg gcc atg cac gtg gcc tac tac aga cat 403
Ser Thr Pro Ala Leu Leu Val Ala Met His Val Ala Tyr Tyr Arg His
      85              90              95              100

gaa act gcc cga aag ttt ata cgt ggg gag aag aga aac gag ttt aaa 451
Glu Thr Ala Arg Lys Phe Ile Arg Gly Glu Lys Arg Asn Glu Phe Lys
      105              110              115

gac ctg gag gac atc aaa cgg cag aag gtg cgc att gag ggc tcc ctg 499
Asp Leu Glu Asp Ile Lys Arg Gln Lys Val Arg Ile Glu Gly Ser Leu
      120              125              130

tgg tgg acg tac acc agc agc att ttc ttc cgc atc atc ttc gaa gcc 547
Trp Trp Thr Tyr Thr Ser Ser Ile Phe Phe Arg Ile Ile Phe Glu Ala
      135              140              145

gcc ttc atg tat gtg ttc tac ttc ctc tac aat ggg tac cac cta ccc 595
Ala Phe Met Tyr Val Phe Tyr Phe Leu Tyr Asn Gly Tyr His Leu Pro
      150              155              160

tgg gta ctg aaa tgt ggc att gac ccc tgc ccc aat ctc gtg gac tgc 643
Trp Val Leu Lys Cys Gly Ile Asp Pro Cys Pro Asn Leu Val Asp Cys

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165 170 175 180
 ttc att tcg agg cca act gag aaa acg gtg ttc act gtt ttt atg att 691
 Phe Ile Ser Arg Pro Thr Glu Lys Thr Val Phe Thr Val Phe Met Ile
 185 190 195
 tcc gca tcc gtg att tgc atg ctg ctc aat gtg gcc gag ttg tgt tac 739
 Ser Ala Ser Val Ile Cys Met Leu Leu Asn Val Ala Glu Leu Cys Tyr
 200 205 210
 ctg ctg ctt aaa ttg tgc ttt agg aga tcc aaa aga aca cag gcg cag 787
 Leu Leu Leu Lys Leu Cys Phe Arg Arg Ser Lys Arg Thr Gln Ala Gln
 215 220 225
 aga aac cac ccc aac cat gcc ctg aaa gag agc aag cag aat gaa atg 835
 Arg Asn His Pro Asn His Ala Leu Lys Glu Ser Lys Gln Asn Glu Met
 230 235 240
 aat gag ctg atc tca gat agt ggc cag aat gca atc aca agt ttc cca 883
 Asn Glu Leu Ile Ser Asp Ser Gly Gln Asn Ala Ile Thr Ser Phe Pro
 245 250 255 260
 agt taa gcatttcaag gtcaagtgtt ggtgagccct tctgagcatg taccctcttt 939
 Ser
 gtagacaaca ttgatctgac aactcctcct ctagggtcaag agtttgtcta taagtgactc 999
 atagaaagtg gatacttgag ttcgattatt gtagaacacc tgagctgttc atacacaata 1059
 taagtcaaaa ttgtggtcta tctctgaaaa ccaagccctc gtgacaactg ggccttgag 1119
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 ttgtttataa ag 1191

<210> 482

<211> 261

<212> PRT

<213> Mus musculus

<400> 482

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 Ser Thr Ser Ile Gly Lys Val Trp Ile Thr Val Ile Phe Ile Phe Arg
 20 25 30
 Val Met Ile Leu Val Val Ala Ala Gln Glu Val Trp Gly Asp Glu Gln
 35 40 45
 Glu Asp Phe Val Cys Asn Thr Leu Gln Pro Gly Cys Lys Asn Val Cys
 50 55 60
 Tyr Asp His Phe Phe Pro Val Ser His Ile Arg Leu Trp Ala Leu Gln
 65 70 75 80
 Leu Ile Phe Val Ser Thr Pro Ala Leu Leu Val Ala Met His Val Ala
 85 90 95
 Tyr Tyr Arg His Glu Thr Ala Arg Lys Phe Ile Arg Gly Glu Lys Arg
 100 105 110
 Asn Glu Phe Lys Asp Leu Glu Asp Ile Lys Arg Gln Lys Val Arg Ile
 115 120 125
 Glu Gly Ser Leu Trp Trp Thr Tyr Thr Ser Ser Ile Phe Phe Arg Ile
 130 135 140
 Ile Phe Glu Ala Ala Phe Met Tyr Val Phe Tyr Phe Leu Tyr Asn Gly
 145 150 155 160
 Tyr His Leu Pro Trp Val Leu Lys Cys Gly Ile Asp Pro Cys Pro Asn
 165 170 175
 Leu Val Asp Cys Phe Ile Ser Arg Pro Thr Glu Lys Thr Val Phe Thr
 180 185 190
 Val Phe Met Ile Ser Ala Ser Val Ile Cys Met Leu Leu Asn Val Ala
 195 200 205
 Glu Leu Cys Tyr Leu Leu Leu Lys Leu Cys Phe Arg Arg Ser Lys Arg
 210 215 220

Thr Gln Ala Gln Arg Asn His Pro Asn His Ala Leu Lys Glu Ser Lys
 225 230 235 240
 Gln Asn Glu Met Asn Glu Leu Ile Ser Asp Ser Gly Gln Asn Ala Ile
 245 250 255
 Thr Ser Phe Pro Ser
 260

<210> 483

<211> 1762

<212> DNA

<213> Mus musculus

<220>

<221> .CDS

<222> (144).. (797)

<400> 483

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 ttagagttgt ttactatctg agcaagcacc tgacacggig actcttttct tccttttttt 120
 cctcctcggg tcccccgagt aag atg gaa gta gaa aac gaa gcc cac tgc tgc 173

Met Glu Val Glu Asn Glu Ala His Cys Cys

1 5 10

cct ggc agc tca tca ggc ggg tcc aga gag tac aag gtg gta atg ctg 221

Pro Gly Ser Ser Ser Gly Gly Ser Arg Glu Tyr Lys Val Val Met Leu

15 20 25

ggc gca ggg ggc gtt ggt aaa agc gca gtc aca atg cag ttt ata agc 269

Gly Ala Gly Gly Val Gly Lys Ser Ala Val Thr Met Gln Phe Ile Ser

30 35 40

cac cag ttc ccg gac tat cac gac ccc aca atc gaa gat gct tat aaa 317

His	Gln	Phe	Pro	Asp	Tyr	His	Asp	Pro	Thr	Ile	Glu	Asp	Ala	Tyr	Lys		
	45						50					55					
acc	cag	gtg	agg	att	gat	aat	gag	cct	gct	tac	tta	gac	atc	ttg	gac	365	
Thr	Gln	Val	Arg	Ile	Asp	Asn	Glu	Pro	Ala	Tyr	Leu	Asp	Ile	Leu	Asp		
	60						65					70					
act	gct	ggt	cag	gca	gag	ttc	acg	gcc	atg	cgg	gag	cag	tac	atg	cgt	413	
Thr	Ala	Gly	Gln	Ala	Glu	Phe	Thr	Ala	Met	Arg	Glu	Gln	Tyr	Met	Arg		
	75					80				85				90			
ggg	gga	gag	ggc	ttc	atc	atc	tgc	tat	tct	gtc	act	gac	cgc	cag	tca	461	
Gly	Gly	Glu	Gly	Phe	Ile	Ile	Cys	Tyr	Ser	Val	Thr	Asp	Arg	Gln	Ser		
			95						100					105			
ttc	cag	gag	gct	gcc	aag	ttc	aag	gag	ctt	att	ttc	cag	gtc	cgt	cac	509	
Phe	Gln	Glu	Ala	Ala	Lys	Phe	Lys	Glu	Leu	Ile	Phe	Gln	Val	Arg	His		
			110						115					120			
acc	tat	gaa	att	ccc	ctt	gtg	cta	gtg	ggt	aac	aaa	att	gac	ttg	gag	557	
Thr	Tyr	Glu	Ile	Pro	Leu	Val	Leu	Val	Gly	Asn	Lys	Ile	Asp	Leu	Glu		
			125						130					135			
cag	ttc	cgt	cag	gta	tct	aca	gaa	gaa	ggc	atg	aat	ctt	gct	cga	gac	605	
Gln	Phe	Arg	Gln	Val	Ser	Thr	Glu	Glu	Gly	Met	Asn	Leu	Ala	Arg	Asp		
			140						145					150			
tac	aac	tgt	gcc	ttc	ttt	gag	aca	tct	gca	gcc	ctg	cga	ttc	ggt	atc	653	
Tyr	Asn	Cys	Ala	Phe	Phe	Glu	Thr	Ser	Ala	Ala	Leu	Arg	Phe	Gly	Ile		
			155						160					165		170	
gat	gat	gct	ttt	caa	ggc	tta	gtg	aga	gaa	att	cgc	agg	aag	gaa	tcc	701	
Asp	Asp	Ala	Phe	Gln	Gly	Leu	Val	Arg	Glu	Ile	Arg	Arg	Lys	Glu	Ser		
			175						180					185			
atg	ctg	tcc	ttg	gtg	gaa	agg	aaa	ttg	aag	agg	aag	gac	agc	ctg	tgg	749	
Met	Leu	Ser	Leu	Val	Glu	Arg	Lys	Leu	Lys	Arg	Lys	Asp	Ser	Leu	Trp		
			190						195					200			

aag aag ata aaa gcc tcc ctg aag aag aag aga gaa aac atg ttg tga 797
 Lys Lys Ile Lys Ala Ser Leu Lys Lys Lys Arg Glu Asn Met Leu
 205 210 215
 ggctttgctt cgcacatcctt cctgtctctc ctgtgtgggtt ttatcaacca gacaatigt 857
 catactctcca tctcactctc tctttctctc tccatctctt ttcttttccc tttccccctc 917
 tcttaacaca cacacacaca caatctacct gcaggcagaa attagacttc tataactgtg 977
 tgtcttgaga tagttttatt ttgcctttta cagctggata gattttgtca atcagctgga 1037
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 tttcctgtaa agtgtagctt cattttgcat gctgtctggt tataaagaaa atctgcaaac 1157
 ttgttaactgg gatgataaaa ggcttagggg atctgctttt gcttgataac cctgggtgtt 1217
 tgcatttcac aaatctgtaa ataatgaaga ggcctggaata gtttagagga aaaaaaatg 1277
 tccttgtctt ctcttaagtg gaagagtctt ggtatttctt cttagagcct ctatagatga 1337
 acattagaga aattattgat aataggaact gagtttgtgt tattaataata ctaaaattac 1397
 atgtcccat atttagtgct cagtctgcca tatgctttat agaagtaacca cagtaaagtt. 1457
 actgtaatga tagtctaigt tatctgttgt aggaagacag caatactatg aactagatga 1517
 tacatgtgcc caagaaagga ccttttgccc ctctcaatga atcttcttag aattgcttca 1577
 cctgcatagt agccatctgt ctgcagcgat atggcctcta catactaagt gttctcttca 1637
 tattattaaa tttctctctt cattttccaa gaagcattac aagaagctga catcagaaat 1697
 gttgttgta tttgtcttgt tatttgttca ttgtgtaaaa taaaatctct cagtcacca 1757
 ttaaa 1762

<210> 484

<211> 217

<212> PRT

<213> Mus musculus

<400> 484

Met Glu Val Glu Asn Glu Ala His Cys Cys Pro Gly Ser Ser Ser Gly

1

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10

15

Gly Ser Arg Glu Tyr Lys Val Val Met Leu Gly Ala Gly Gly Val Gly
 20 25 30
 Lys Ser Ala Val Thr Met Gln Phe Ile Ser His Gln Phe Pro Asp Tyr
 35 40 45
 His Asp Pro Thr Ile Glu Asp Ala Tyr Lys Thr Gln Val Arg Ile Asp
 50 55 60
 Asn Glu Pro Ala Tyr Leu Asp Ile Leu Asp Thr Ala Gly Gln Ala Glu
 65 70 75 80
 Phe Thr Ala Met Arg Glu Gln Tyr Met Arg Gly Gly Glu Gly Phe Ile
 85 90 95
 Ile Cys Tyr Ser Val Thr Asp Arg Gln Ser Phe Gln Glu Ala Ala Lys
 100 105 110
 Phe Lys Glu Leu Ile Phe Gln Val Arg His Thr Tyr Glu Ile Pro Leu
 115 120 125
 Val Leu Val Gly Asn Lys Ile Asp Leu Glu Gln Phe Arg Gln Val Ser
 130 135 140
 Thr Glu Glu Gly Met Asn Leu Ala Arg Asp Tyr Asn Cys Ala Phe Phe
 145 150 155 160
 Glu Thr Ser Ala Ala Leu Arg Phe Gly Ile Asp Asp Ala Phe Gln Gly
 165 170 175
 Leu Val Arg Glu Ile Arg Arg Lys Glu Ser Met Leu Ser Leu Val Glu
 180 185 190
 Arg Lys Leu Lys Arg Lys Asp Ser Leu Trp Lys Lys Ile Lys Ala Ser
 195 200 205
 Leu Lys Lys Lys Arg Glu Asn Met Leu
 210 215

<210> 485

<211> 959

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (56).. (478):

<400> 485

gtttgacgac tgcacacagc agtacaaggc ggagaagcag aagggccggt tccga atg 58
Met

1

aag gag aga gag gag atg tgg cag aag atc gag gag ctg gcc cgg ctc 106
Lys Glu Arg Glu Glu Met Trp Gln Lys Ile Glu Glu Leu Ala Arg Leu

5

10

15

aat ccc cag tac cct atg ttt cgg ctc ctc cgc cac tgc ccc tgt gta 154
Asn Pro Gln Tyr Pro Met Phe Arg Leu Leu Arg His Cys Pro Cys Val

20

25

30

ctc cat gga gac aga gac gcc cac agc aga gga cat tca gct cct gaa 202
Leu His Gly Asp Arg Asp Ala His Ser Arg Gly His Ser Ala Pro Glu

35

40

45

gag gac ggt gga gac aga ggc cgt gca gat gct gaa gga cat caa gaa 250
Glu Asp Gly Gly Asp Arg Gly Arg Ala Asp Ala Glu Gly His Gln Glu

50

55

60

65

gga caa agt gct gct ccg gag gaa gtc aga gct gcc aca gga cgt gta 298
Gly Gln Ser Ala Ala Pro Glu Glu Val Arg Ala Ala Thr Gly Arg Val

70

75

80

cac cat caa ggc act aga ggg cac aag cgg gca gaa gag ttc ctg act 346
His His Gln Gly Thr Arg Gly His Lys Arg Ala Glu Glu Phe Leu Thr

85

90

95

gcc agc agg agg ccc tct gac ccc ctc acc ttc cct tcc cac agg att 394
 Ala Ser Arg Arg Pro Ser Asp Pro Leu Thr Phe Pro Ser His Arg Ile
 100 105 110
 cca gcc cac tca gcc tgg agg gaa cca atc ccc agc agc aca aat agg 442
 Pro Ala His Ser Ala Trp Arg Glu Pro Ile Pro Ser Ser Thr Asn Arg
 115 120 125
 ccc cta gac cca gct tta tgc agg cgg ggg tgg tag tgtgtttctt 488
 Pro Leu Asp Pro Ala Leu Cys Arg Arg Gly Trp
 130 135 140
 tgtatcctat acctaaccaa gacaacacag aggacaaaca agttacggac actagatgac 548
 tagtgggccc ggtgggagaa agaaccatct gccttgcct cttctggcaag cagcagtcct 608
 gggatcacac atttgcaagg gaccaccctg tggctgactg ctttcccttg tgctcttgg 668
 tcccagagct ataaagaagg aggcaaggca gtgctccaag catggctccc tgctgtgcct 728
 gtttatttcc tggtttctgc tgacgctggg ctgggcgggt ctcacctgta ccctctaggc 788
 gctcagaaac aaaagcctgg ggagggctgg accaggattc aggagcacag gcgtgtggct 848
 tctggctgtg tacacagggt gccttattct ccacagagtg atacatgcta aggtgggctg 908
 gcttggccga tgtccccata tgtacagaac tgaataaagt gggctctctga g 959

<210> 486

<211> 140

<212> PRT

<213> Mus musculus

<400> 486

Met Lys Glu Arg Glu Glu Met Trp Gln Lys Ile Glu Glu Leu Ala Arg
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 Leu Asn Pro Gln Tyr Pro Met Phe Arg Leu Leu Arg His Cys Pro Cys
 20 25 30
 Val Leu His Gly Asp Arg Asp Ala His Ser Arg Gly His Ser Ala Pro

35 40 45
 Glu Glu Asp Gly Gly Asp Arg Gly Arg Ala Asp Ala Glu Gly His Gln
 50 55 60
 Glu Gly Gln Ser Ala Ala Pro Glu Glu Val Arg Ala Ala Thr Gly Arg
 65 70 75 80
 Val His His Gln Gly Thr Arg Gly His Lys Arg Ala Glu Glu Phe Leu
 85 90 95
 Thr Ala Ser Arg Arg Pro Ser Asp Pro Leu Thr Phe Pro Ser His Arg
 100 105 110
 Ile Pro Ala His Ser Ala Trp Arg Glu Pro Ile Pro Ser Ser Thr Asn
 115 120 125
 Arg Pro Leu Asp Pro Ala Leu Cys Arg Arg Gly Trp
 130 135 140

<210> 487

<211> 4010

<212> DNA

<213> Mus musculus.

<220>

<221> CDS

<222> (192).. (3266)

<400> 487

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 gggcgcgcgcg cgagagggga ggcctttccg ggctgcggcg gccagcgcaa aatcgggcgc 120
 ggccgcgctg agtccccgac ccccgggaga gcgctggggc gtggcgccgg ctccgcggcc 180
 gcctagccga c atg tcg gcg gcc aag gaa aac ccg tgc agg aaa ttt cag 230
 Met Ser Ala Ala Lys Glu Asn Pro Cys Arg Lys Phe Gln

	1	5	10	
gcc aac atc ttc aac aag agc aag tgt cag aac tgc ttc aag ccc cgc	278			
Ala Asn Ile Phe Asn Lys Ser Lys Cys Gln Asn Cys Phe Lys Pro Arg				
15	20	25		
gag tgc cat ctg ctc aac gac gag gac ctg acg cag gca aaa ccc att	326			
Glu Ser His Leu Leu Asn Asp Glu Asp Leu Thr Gln Ala Lys Pro Ile				
30	35	40	45	
tat ggt ggc tgg ctg ctc ctg gct cca gat ggc act gac ttt gac aac	374			
Tyr Gly Gly Trp Leu Leu Leu Ala Pro Asp Gly Thr Asp Phe Asp Asn				
50	55	60		
cca gtg cac cgg tca cgg aaa tgg cag cga cga ttc ttc atc ctt tat	422			
Pro Val His Arg Ser Arg Lys Trp Gln Arg Arg Phe Phe Ile Leu Tyr				
65	70	75		
gag cat ggc ctc ttg cga tat gcc ctg gat gag atg ccc acc acc ctc	470			
Glu His Gly Leu Leu Arg Tyr Ala Leu Asp Glu Met Pro Thr Thr Leu				
80	85	90		
cct cag ggc acc atc aac atg aac cag tgc aca gat gtg gtg gat ggg	518			
Pro Gln Gly Thr Ile Asn Met Asn Gln Cys Thr Asp Val Val Asp Gly				
95	100	105		
gag gcc cgc aca ggg cag aag ttc tcc ctc tgc atc ctg aca cct gac	566			
Glu Ala Arg Thr Gly Gln Lys Phe Ser Leu Cys Ile Leu Thr Pro Asp				
110	115	120	125	
aag gaa cat ttt atc agg gca gaa acc aag gag atc atc agt ggg tgg	614			
Lys Glu His Phe Ile Arg Ala Glu Thr Lys Glu Ile Ile Ser Gly Trp				
130	135	140		
tta gag atg ctc atg gtg tat cct cga acc aac aag cag aac cag aag	662			
Leu Glu Met Leu Met Val Tyr Pro Arg Thr Asn Lys Gln Asn Gln Lys				
145	150	155		
aag aaa cgg aaa gta gag cca cct acc cca cag gag cct ggg cct gct	710			

Lys Lys Arg Lys Val Glu Pro Pro Thr Pro Gln Glu Pro Gly Pro Ala
 160 165 170
 aag atg gct gtc act agc agt agt ggc ggc acg agt ggt agc agc agc 758
 Lys Met Ala Val Thr Ser Ser Ser Gly Gly Thr Ser Gly Ser Ser Ser
 175 180 185
 agc att ccc agt gct gag aaa gtt ccc acc acc aaa tcc aca ctc tgg 806
 Ser Ile Pro Ser Ala Glu Lys Val Pro Thr Thr Lys Ser Thr Leu Trp
 190 195 200 205
 cag gaa gaa atg aga gcc aaa gac caa cct gat ggg acc agc ctg agt 854
 Gln Glu Glu Met Arg Ala Lys Asp Gln Pro Asp Gly Thr Ser Leu Ser
 210 215 220
 cca gct caa agt ccc agc caa agc cag cct cct gct gct tgc acc cca 902
 Pro Ala Gln Ser Pro Ser Gln Ser Gln Pro Pro Ala Ala Cys Thr Pro
 225 230 235
 cgg gaa cca gga cta gaa agc aaa gaa gat gaa agc acc ata agt ggg 950
 Arg Glu Pro Gly Leu Glu Ser Lys Glu Asp Glu Ser Thr Ile Ser Gly
 240 245 250
 gac cgt gtg gat ggt ggt cgg aaa gta cgg gta gag agc ggc tac ttc 998
 Asp Arg Val Asp Gly Gly Arg Lys Val Arg Val Glu Ser Gly Tyr Phe
 255 260 265
 tcc ctg gag aag gcc aag cag gac ctg agg gct gag gag cag ctg ccc 1046
 Ser Leu Glu Lys Ala Lys Gln Asp Leu Arg Ala Glu Glu Gln Leu Pro
 270 275 280 285
 cca cta ctc tcc cca ccc agc ccc agc acc cca cac agc agg agg tcc 1094
 Pro Leu Leu Ser Pro Pro Ser Pro Ser Thr Pro His Ser Arg Arg Ser
 290 295 300
 cag gta att gag aaa ttt gag gcc ttg gac att gaa aaa gca gag cac 1142
 Gln Val Ile Glu Lys Phe Glu Ala Leu Asp Ile Glu Lys Ala Glu His
 305 310 315

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atg gaa acc aac atg ctg att ctg acc act cca tca agt gac act cgt      1190
Met Glu Thr Asn Met Leu Ile Leu Thr Thr Pro Ser Ser Asp Thr Arg
      320                      325                      330
cag ggc cgc agt gag aga cgg gcc atc cct aga aag cgg gac ttt gcc      1238
Gln Gly Arg Ser Glu Arg Arg Ala Ile Pro Arg Lys Arg Asp Phe Ala
      335                      340                      345
agc gaa gcc ccc aca gct cct ctc tca gat gct tgt ccc ctg tct cca      1286
Ser Glu Ala Pro Thr Ala Pro Leu Ser Asp Ala Cys Pro Leu Ser Pro
350                      355                      360                      365
cac cga aga gcc aag tca ttg gac agg agg tcc aca gaa tcc tcc atg      1334
His Arg Arg Ala Lys Ser Leu Asp Arg Arg Ser Thr Glu Ser Ser Met
      370                      375                      380
acg cct gac ctg ctg aat ttc aag aaa ggc tgg cta acc aag cag tat      1382
Thr Pro Asp Leu Leu Asn Phe Lys Lys Gly Trp Leu Thr Lys Gln Tyr
      385                      390                      395
gag gat ggc cag tgg aag aaa cac tgg ttt gtc ctg gca gat cag agc      1430
Glu Asp Gly Gln Trp Lys Lys His Trp Phe Val Leu Ala Asp Gln Ser
      400                      405                      410
ctg aga tac tac agg gat tcc gtg gct gag gag gca gct gac cta gat      1478
Leu Arg Tyr Tyr Arg Asp Ser Val Ala Glu Glu Ala Ala Asp Leu Asp
      415                      420                      425
gga gaa att aac ttg tcc act tgc tat gat gtc act gag tat cca gtc      1526
Gly Glu Ile Asn Leu Ser Thr Cys Tyr Asp Val Thr Glu Tyr Pro Val
430                      435                      440                      445
cag aga aac tat ggc ttt cag ata cat acc aag gag ggt gag ttc acc      1574
Gln Arg Asn Tyr Gly Phe Gln Ile His Thr Lys Glu Gly Glu Phe Thr
      450                      455                      460
ctc tca gcc atg aca tct ggc ata cga cgg aac tgg atc cag acc att      1622
Leu Ser Ala Met Thr Ser Gly Ile Arg Arg Asn Trp Ile Gln Thr Ile

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Met Lys His Val Leu Pro Ala Ser Ala Pro Asp Val Thr Ser Ser Leu			
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Pro Glu Gly Lys Asn Lys Ser Thr Ser Phe Glu Thr Cys Ser Arg Ser			
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act gag aag caa gaa gct gag cca gga gag cca gat cct gaa caa aag	1766		
Thr Glu Lys Gln Glu Ala Glu Pro Gly Glu Pro Asp Pro Glu Gln Lys			
510	515	520	525
aag agc cgt gct cga gag cgg agg cgg gag ggt cgc tcc aag acc ttt	1814		
Lys Ser Arg Ala Arg Glu Arg Arg Arg Glu Gly Arg Ser Lys Thr Phe			
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gac tgg gct gaa ttc cgc cct ata caa cag gcc ctg gct caa gaa agg	1862		
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Pro Arg Lys Arg Phe Gly Met Leu Asp Thr Ile Asp Gly Pro Gly Met			
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Glu Asp Thr Ala Leu Arg Met Asp Ile Asp Arg Ser Pro Gly Leu Leu			
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ccc att gcc cct ctg cac cta tcc ttg gag gac aga agt gag cgg ctc	2198
Pro Ile Ala Pro Leu His Leu Ser Leu Glu Asp Arg Ser Glu Arg Leu	
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Ser Thr His Glu Leu Thr Ser Leu Leu Glu Lys Glu Leu Glu Gln Ser	
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Gln Leu Arg Val Ala Leu Gly Arg Glu Gln Ser Ala Arg Glu Gly Tyr	
705	710
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Val Leu Gln Ala Thr Cys Glu Arg Gly Phe Ala Ala Met Glu Glu Thr	
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cat cag aag aag att gaa gac cta cag agg caa cac cag cgg gag cta	2438
His Gln Lys Lys Ile Glu Asp Leu Gln Arg Gln His Gln Arg Glu Leu	
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Glu Lys Leu Arg Glu Glu Lys Asp Arg Leu Leu Ala Glu Glu Thr Ala	
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gcc acc ata tca gcc att gaa gcc atg aag aat gct cac cga gag gag	2534
Ala Thr Ile Ser Ala Ile Glu Ala Met Lys Asn Ala His Arg Glu Glu	
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	780

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 Cys Leu Glu Asn Ala His Leu Ala Gln Ala Leu Glu Ala Glu Arg Gln
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 880 885 890
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 895 900 905
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930	935	940	
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Asp Ile Tyr Thr Glu Leu Ser Ile Ala Lys Ala Lys Ala Asp Cys Asp			
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atc agc agg ctg aag gag cag ctg aaa gca gcc aca gag gca ctg ggc			3110
Ile Ser Arg Leu Lys Glu Gln Leu Lys Ala Ala Thr Glu Ala Leu Gly			
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gag aaa tct cct gaa ggc act act gtg tca gga tat gac ata atg aaa			3158
Glu Lys Ser Pro Glu Gly Thr Thr Val Ser Gly Tyr Asp Ile Met Lys			
975	980	985	
tct aaa agc aat cct gac ttc ctg aag aaa gac aga tcc tgt gtt acc			3206
Ser Lys Ser Asn Pro Asp Phe Leu Lys Lys Asp Arg Ser Cys Val Thr			
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cgg caa ctc aga aac atc agg tcc aag tcc gta att gag cag gtc tca			3254
Arg Gln Leu Arg Asn Ile Arg Ser Lys Ser Val Ile Glu Gln Val Ser			
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Trp Asp Asn			
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<210> 488

<211> 1024

<212> PRT

<213> Mus musculus

<400> 488

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				20				25					30		
Leu	Leu	Asn	Asp	Glu	Asp	Leu	Thr	Gln	Ala	Lys	Pro	Ile	Tyr	Gly	Gly
		35					40					45			
Trp	Leu	Leu	Leu	Ala	Pro	Asp	Gly	Thr	Asp	Phe	Asp	Asn	Pro	Val	His
		50				55				60					
Arg	Ser	Arg	Lys	Trp	Gln	Arg	Arg	Phe	Phe	Ile	Leu	Tyr	Glu	His	Gly
65				70						75				80	
Leu	Leu	Arg	Tyr	Ala	Leu	Asp	Glu	Met	Pro	Thr	Thr	Leu	Pro	Gln	Gly
				85						90				95	
Thr	Ile	Asn	Met	Asn	Gln	Cys	Thr	Asp	Val	Val	Asp	Gly	Glu	Ala	Arg
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Thr	Gly	Gln	Lys	Phe	Ser	Leu	Cys	Ile	Leu	Thr	Pro	Asp	Lys	Glu	His
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Phe	Ile	Arg	Ala	Glu	Thr	Lys	Glu	Ile	Ile	Ser	Gly	Trp	Leu	Glu	Met
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Leu	Met	Val	Tyr	Pro	Arg	Thr	Asn	Lys	Gln	Asn	Gln	Lys	Lys	Lys	Arg
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Lys Val Glu Pro Pro Thr Pro Gln Glu Pro Gly Pro Ala Lys Met Ala
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 Val Thr Ser Ser Ser Gly Gly Thr Ser Gly Ser Ser Ser Ser Ile Pro
 180 185 190
 Ser Ala Glu Lys Val Pro Thr Thr Lys Ser Thr Leu Trp Gln Glu Glu
 195 200 205
 Met Arg Ala Lys Asp Gln Pro Asp Gly Thr Ser Leu Ser Pro Ala Gln
 210 215 220
 Ser Pro Ser Gln Ser Gln Pro Pro Ala Ala Cys Thr Pro Arg Glu Pro
 225 230 235 240
 Gly Leu Glu Ser Lys Glu Asp Glu Ser Thr Ile Ser Gly Asp Arg Val
 245 250 255
 Asp Gly Gly Arg Lys Val Arg Val Glu Ser Gly Tyr Phe Ser Leu Glu
 260 265 270
 Lys Ala Lys Gln Asp Leu Arg Ala Glu Glu Gln Leu Pro Pro Leu Leu
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 Ser Pro Pro Ser Pro Ser Thr Pro His Ser Arg Arg Ser Gln Val Ile
 290 295 300
 Glu Lys Phe Glu Ala Leu Asp Ile Glu Lys Ala Glu His Met Glu Thr
 305 310 315 320
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 Ser Glu Arg Arg Ala Ile Pro Arg Lys Arg Asp Phe Ala Ser Glu Ala
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 Pro Thr Ala Pro Leu Ser Asp Ala Cys Pro Leu Ser Pro His Arg Arg
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 Ala Lys Ser Leu Asp Arg Arg Ser Thr Glu Ser Ser Met Thr Pro Asp
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Tyr Gly Phe Gln Ile His Thr Lys Glu Gly Glu Phe Thr Leu Ser Ala			
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Met Thr Ser Gly Ile Arg Arg Asn Trp Ile Gln Thr Ile Met Lys His			
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Lys Asn Lys Ser Thr Ser Phe Glu Thr Cys Ser Arg Ser Thr Glu Lys			
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Gln Glu Ala Glu Pro Gly Glu Pro Asp Pro Glu Gln Lys Lys Ser Arg			
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 645 650 655
 Pro Leu His Leu Ser Leu Glu Asp Arg Ser Glu Arg Leu Ser Thr His
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 Glu Leu Thr Ser Leu Leu Glu Lys Glu Leu Glu Gln Ser Gln Lys Glu
 675 680 685
 Ala Ser Asp Leu Leu Glu Gln Asn Arg Leu Leu Gln Asp Gln Leu Arg
 690 695 700
 Val Ala Leu Gly Arg Glu Gln Ser Ala Arg Glu Gly Tyr Val Leu Gln
 705 710 715 720
 Ala Thr Cys Glu Arg Gly Phe Ala Ala Met Glu Glu Thr His Gln Lys
 725 730 735
 Lys Ile Glu Asp Leu Gln Arg Gln His Gln Arg Glu Leu Glu Lys Leu
 740 745 750
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 755 760 765
 Ser Ala Ile Glu Ala Met Lys Asn Ala His Arg Glu Glu Met Glu Arg
 770 775 780
 Glu Leu Glu Lys Ser Gln Arg Ser Gln Ile Ser Ser Ile Asn Ser Asp
 785 790 795 800
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 820 825 830
 Asn Ala His Leu Ala Gln Ala Leu Glu Ala Glu Arg Gln Ala Leu Arg
 835 840 845
 Gln Cys Gln Arg Glu Asn Gln Glu Leu Asn Ala His Asn Gln Glu Leu

850 855 860
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885 890 895
Asp Ala Tyr Glu Leu Glu Val Leu Leu Arg Val Lys Glu Ser Glu Ile
900 905 910
Gln Tyr Leu Lys Gln Glu Ile Ser Ser Leu Lys Asp Glu Leu Gln Thr
915 920 925
Ala Leu Arg Asp Lys Lys Tyr Ala Ser Asp Lys Tyr Lys Asp Ile Tyr
930 935 940
Thr Glu Leu Ser Ile Ala Lys Ala Lys Ala Asp Cys Asp Ile Ser Arg
945 950 955 960
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965 970 975
Pro Glu Gly Thr Thr Val Ser Gly Tyr Asp Ile Met Lys Ser Lys Ser
980 985 990
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<211> 2295

<212> DNA

<213> Mus musculus

<220>

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<222> (651).. (1778)

<400> 489

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Met Leu

1

gat cgg gat gtg ggc cca act ccc atg tac cca cct aca tac ctg gag 704
 Asp Arg Asp Val Gly Pro Thr Pro Met Tyr Pro Pro Thr Tyr Leu Glu

5

10

15

cct ggg atc ggg agg cac aca cca tat ggt aac caa acc gac tat aga 752
 Pro Gly Ile Gly Arg His Thr Pro Tyr Gly Asn Gln Thr Asp Tyr Arg

20

25

30

ata ttt gag ctt aac aaa cgg cta cag aac tgg aca gag gag tgt gac 800
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35

40

45

50

aat ctc tgg tgg gat gct ttc aca act gag ttc ttt gaa gat gac gcc 848
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55

60

65

atg ctg acc atc act ttc tgc ttg gag gat gga cca aag aga tat acc 896

Met Leu Thr Ile Thr Phe Cys Leu Glu Asp Gly Pro Lys Arg Tyr Thr
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 Ile Gly Arg Thr Leu Ile Pro Arg Tyr Phe Arg Ser Ile Phe Glu Gly
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 Gly Ala Thr Glu Leu Tyr Tyr Val Leu Lys His Pro Lys Glu Ala Phe
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 Gln His Gly Lys Pro Met Phe Thr Gln Val Cys Val Glu Gly Arg Leu
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 195 200 205 210
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 Val Ile Leu Glu Pro Met Gln Glu Leu Met Ser Arg His Lys Thr Tyr
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 230 235 240
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 295 300 305
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 Pro Thr Leu Met Gly Gly Glu Phe Gly Asp Glu Asp Glu Arg Leu Ile
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 Ser Gln Ala Ser Gln

375

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<211> 375

<212> PRT

<213> Mus musculus

<400> 490

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 35 40 45
 Cys Asp Asn Leu Trp Trp Asp Ala Phe Thr Thr Glu Phe Phe Glu Asp
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 Asp Ala Met Leu Thr Ile Thr Phe Cys Leu Glu Asp Gly Pro Lys Arg
 65 70 75 80
 Tyr Thr Ile Gly Arg Thr Leu Ile Pro Arg Tyr Phe Arg Ser Ile Phe
 85 90 95

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 130 135 140
 Arg Leu Tyr Leu Glu Phe Met Phe Asp Asp Met Met Arg Ile Lys Thr
 145 150 155 160
 Trp His Phe Ser Ile Arg Gln His Arg Glu Leu Ile Pro Arg Ser Ile
 165 170 175
 Leu Ala Met His Ala Gln Asp Pro Gln Met Leu Asp Gln Leu Ser Lys
 180 185 190
 Asn Ile Thr Arg Cys Gly Leu Ser Asn Ser Thr Leu Asn Tyr Leu Arg
 195 200 205
 Leu Cys Val Ile Leu Glu Pro Met Gln Glu Leu Met Ser Arg His Lys
 210 215 220
 Thr Tyr Ser Leu Ser Pro Arg Asp Cys Leu Lys Thr Cys Leu Phe Gln
 225 230 235 240
 Lys Trp Gln Arg Met Val Ala Pro Pro Ala Glu Pro Ala Arg Gln Gln
 245 250 255
 Pro Ser Lys Arg Arg Lys Arg Lys Met Ser Gly Gly Ser Thr Met Ser
 260 265 270
 Ser Gly Gly Gly Asn Thr Asn Asn Ser Asn Ser Lys Lys Lys Ser Pro
 275 280 285
 Ala Ser Thr Phe Ala Leu Ser Ser Gln Val Pro Asp Val Met Val Val
 290 295 300
 Gly Glu Pro Thr Leu Met Gly Gly Glu Phe Gly Asp Glu Asp Glu Arg
 305 310 315 320
 Leu Ile Thr Arg Leu Glu Asn Thr Gln Phe Asp Ala Ala Asn Gly Ile

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Pro	Trp	Asn	Ser	Lys	Pro	Pro	Ser	Ser	Gln	Glu	Ser	Lys	Ser	Glu	Asn
	355		360		365										
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<212> DNA

<213> Mus musculus

<400> 491

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 ctgcagaagc gtctgggacc tcgtggactg gatgcgatcg gtttctccgt gaatcagttc 240
 ggacacccgg agaatggcaa gaatgaagag attctgaatt ccttcaagta cgtccgacac 300
 tgtggcgggt tcttagccaa ttttacattg tgttagaagt acgaagtga taggtgagaa 360
 ggctccaccg ctttttacct cctgcggaat gcctcttcaa aaccagtggt tgacccccct 420
 gagctcatga ctgactccaa gtaactcaat ttggtctccc ggggtcgtaa gcaaattgct 480
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<210> 492

<211> 236

<212> DNA

<213> Mus musculus

<400> 492

catgaccaag gacaacaacc tgcitggaaa gttcgagctc acaggcatcc ctccagcacc 60
 ccgtgggtcc ctccagatga agttaccttt gacatcggcg ccaatggaat cctcaatgtt 120
 tctgctgtag ataagagccc caggaaggag tacaagatct ccatctccaa tacaaggggc 180
 cgcttgagta gggaaatatt tagcccatcg gccaaagaaac ctccggaagtc aaggct 236

<210> 493

<211> 1997

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (169).. (1635)

<400> 493

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 ctccgagggc tgcagcaccc gccgtccccg tcagccctct tgcctgggtc gcggcgggcg 120
 ggagcagccc gaggaggagc cgcagccggg aggcggcggc ctgagccc atg gcg tac 177

Met Ala Tyr

1

agt caa gga ggc ggc aag aag aaa gtg tgc tac tac tat gat ggt gat 225

Ser Gln Gly Gly Gly Lys Lys Lys Val Cys Tyr Tyr Tyr Asp Gly Asp

5

10

15

att ggc aat tat tat tat ggc cag ggt cat ccc atg aag cct cat aga 273

Ile Gly Asn Tyr Tyr Tyr Gly Gln Gly His Pro Met Lys Pro His Arg

20

25

30

35

atc cgg atg act cat aac ttg ctg cta aat tat ggt tta tac cga aaa 321

Ile Arg Met Thr His Asn Leu Leu Leu Asn Tyr Gly Leu Tyr Arg Lys

40	45	50	
atg gaa ata tat agg cct cat aaa gcc act gct gaa gaa atg act aaa			369
Met Glu Ile Tyr Arg Pro His Lys Ala Thr Ala Glu Glu Met Thr Lys			
55	60	65	
tac cac agc gat gag tat atc aag ttt cta cga tca ata aga cca gat			417
Tyr His Ser Asp Glu Tyr Ile Lys Phe Leu Arg Ser Ile Arg Pro Asp			
70	75	80	
aat atg tct gag tac agt aag cag atg cag aga ttt aac gtc gga gaa			465
Asn Met Ser Glu Tyr Ser Lys Gln Met Gln Arg Phe Asn Val Gly Glu			
85	90	95	
gat tgt ccg gtg ttt gat gga ctc ttt gag ttt tgt cag ctc tcc acg			513
Asp Cys Pro Val Phe Asp Gly Leu Phe Glu Phe Cys Gln Leu Ser Thr			
100	105	110	115
ggg ggt tca gtt gct ggg gct gtg aaa tta aac cgg caa caa act gat			561
Gly Gly Ser Val Ala Gly Ala Val Lys Leu Asn Arg Gln Gln Thr Asp			
120	125	130	
atg gct gtc aat tgg gct gga gga cta cat cat gcc aag aag tca gaa			609
Met Ala Val Asn Trp Ala Gly Gly Leu His His Ala Lys Lys Ser Glu			
135	140	145	
gca tca ggg ttc tgc tat gtt aat gat att gtg ctt gcc atc ctc gaa			657
Ala Ser Gly Phe Cys Tyr Val Asn Asp Ile Val Leu Ala Ile Leu Glu			
150	155	160	
tta ctt aag tat cat cag aga gtc tta tat att gac ata gac atc cac			705
Leu Leu Lys Tyr His Gln Arg Val Leu Tyr Ile Asp Ile Asp Ile His			
165	170	175	
cat ggt gat ggt gtt gag gaa gct ttt tat aca aca gat cgc gtg atg			753
His Gly Asp Gly Val Glu Glu Ala Phe Tyr Thr Thr Asp Arg Val Met			
180	185	190	195
acc gtc tca ttc cat aaa tat ggg gaa tac ttt cct gga aca gga gac			801

act cca gaa tat atg gaa aag ata aaa cag cgt tta ttt gaa aat cta 1281
 Thr Pro Glu Tyr Met Glu Lys Ile Lys Gln Arg Leu Phe Glu Asn Leu
 360 365 370
 cgt atg tta cca cat gca cct ggt gtt caa atg caa gct att cca gag 1329
 Arg Met Leu Pro His Ala Pro Gly Val Gln Met Gln Ala Ile Pro Glu
 375 380 385
 gat gct gtt cat gaa gac agt gga gat gag gat gga gaa gac ccg gac 1377
 Asp Ala Val His Glu Asp Ser Gly Asp Glu Asp Gly Glu Asp Pro Asp
 390 395 400
 aaa aga att tcc att cga gca tca gac aaa cgg ata gct tgc gat gaa 1425
 Lys Arg Ile Ser Ile Arg Ala Ser Asp Lys Arg Ile Ala Cys Asp Glu
 405 410 415
 gag ttt tca gat tct gag gat gaa ggt gaa gga ggt cgt agg aat gtt 1473
 Glu Phe Ser Asp Ser Glu Asp Glu Gly Glu Gly Gly Arg Arg Asn Val
 420 425 430 435
 gct gat cat aag aaa gga gca aag aag gct agg att gaa gaa gac aag 1521
 Ala Asp His Lys Lys Gly Ala Lys Lys Ala Arg Ile Glu Glu Asp Lys
 440 445 450
 aag gag aca gag gac aag aag aca gat gtt aag gaa gaa gac aaa tcc 1569
 Lys Glu Thr Glu Asp Lys Lys Thr Asp Val Lys Glu Glu Asp Lys Ser
 455 460 465
 aag gac aat agt ggt gag aaa aca gac ccc aaa gga gcc aag tca gaa 1617
 Lys Asp Asn Ser Gly Glu Lys Thr Asp Pro Lys Gly Ala Lys Ser Glu
 470 475 480
 caa ctc agc aac cct tga atttgactct ccaactttag gaacctcgaa 1665
 Gln Leu Ser Asn Pro
 485
 aagtgagacg attctgggat aagaaacctt cctgtttga ggacattggc ttcattttat 1725
 actgttttgg catggactgt atttattttc aaaatggctt gtttttgttt ttcttggcaa 1785

gttttatgt gagtttttct aattatgaaa gcaaattttt ttttccacca tgcattatgt 1845
 gattgtatit aaattgatgt gttattatgt caaaagccgg atctattaaa gaaacaattg 1905
 gccttttciga gcigattttt ccaatctttg taattatctt tattaaaaaa ttgtacttgg 1965
 aaaaaaaaaa aaaaaaaagt gaacitctga ga 1997

<210> 494

<211> 488

<212> PRT

<213> Mus musculus

<400> 494

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			20					25					30		
Pro	His	Arg	Ile	Arg	Met	Thr	His	Asn	Leu	Leu	Leu	Asn	Tyr	Gly	Leu
		35					40					45			
Tyr	Arg	Lys	Met	Glu	Ile	Tyr	Arg	Pro	His	Lys	Ala	Thr	Ala	Glu	Glu
	50					55					60				
Met	Thr	Lys	Tyr	His	Ser	Asp	Glu	Tyr	Ile	Lys	Phe	Leu	Arg	Ser	Ile
65				70					75					80	
Arg	Pro	Asp	Asn	Met	Ser	Glu	Tyr	Ser	Lys	Gln	Met	Gln	Arg	Phe	Asn
			85						90					95	
Val	Gly	Glu	Asp	Cys	Pro	Val	Phe	Asp	Gly	Leu	Phe	Glu	Phe	Cys	Gln
		100							105					110	
Leu	Ser	Thr	Gly	Gly	Ser	Val	Ala	Gly	Ala	Val	Lys	Leu	Asn	Arg	Gln
		115						120						125	
Gln	Thr	Asp	Met	Ala	Val	Asn	Trp	Ala	Gly	Gly	Leu	His	His	Ala	Lys
	130							135						140	

Lys Ser Glu Ala Ser Gly Phe Cys Tyr Val Asn Asp Ile Val Leu Ala
 145 150 155 160
 Ile Leu Glu Leu Leu Lys Tyr His Gln Arg Val Leu Tyr Ile Asp Ile
 165 170 175
 Asp Ile His His Gly Asp Gly Val Glu Glu Ala Phe Tyr Thr Thr Asp
 180 185 190
 Arg Val Met Thr Val Ser Phe His Lys Tyr Gly Glu Tyr Phe Pro Gly
 195 200 205
 Thr Gly Asp Leu Arg Asp Ile Gly Ala Gly Lys Gly Lys Tyr Tyr Ala
 210 215 220
 Val Asn Phe Pro Met Arg Asp Gly Ile Asp Asp Glu Ser Tyr Gly Gln
 225 230 235 240
 Ile Phe Lys Pro Ile Ile Ser Lys Val Met Glu Met Tyr Gln Pro Ser
 245 250 255
 Ala Val Val Leu Gln Cys Gly Ala Asp Ser Leu Ser Gly Asp Arg Leu
 260 265 270
 Gly Cys Phe Asn Leu Thr Val Lys Gly His Ala Lys Cys Val Glu Val
 275 280 285
 Ala Lys Thr Phe Asn Leu Pro Leu Leu Met Leu Gly Gly Gly Tyr
 290 295 300
 Thr Ile Arg Asn Val Ala Arg Cys Trp Thr Tyr Glu Thr Ala Val Ala
 305 310 315 320
 Leu Asp Cys Glu Ile Pro Asn Glu Leu Pro Tyr Asn Asp Tyr Phe Glu
 325 330 335
 Tyr Phe Gly Pro Asp Phe Lys Leu His Ile Ser Pro Ser Asn Met Thr
 340 345 350
 Asn Gln Asn Thr Pro Glu Tyr Met Glu Lys Ile Lys Gln Arg Leu Phe
 355 360 365
 Glu Asn Leu Arg Met Leu Pro His Ala Pro Gly Val Gln Met Gln Ala

370 375 380
 Ile Pro Glu Asp Ala Val His Glu Asp Ser Gly Asp Glu Asp Gly Glu
 385 390 395 400
 Asp Pro Asp Lys Arg Ile Ser Ile Arg Ala Ser Asp Lys Arg Ile Ala
 405 410 415
 Cys Asp Glu Glu Phe Ser Asp Ser Glu Asp Glu Gly Glu Gly Gly Arg
 420 425 430
 Arg Asn Val Ala Asp His Lys Lys Gly Ala Lys Lys Ala Arg Ile Glu
 435 440 445
 Glu Asp Lys Lys Glu Thr Glu Asp Lys Lys Thr Asp Val Lys Glu Glu
 450 455 460
 Asp Lys Ser Lys Asp Asn Ser Gly Glu Lys Thr Asp Pro Lys Gly Ala
 465 470 475 480
 Lys Ser Glu Gln Leu Ser Asn Pro
 485

<210> 495

<211> 468

<212> DNA

<213> Mus musculus

<400> 495

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actggctgcg gcactgcgg gaacctgggtg tgggccatgc gaatgtactg tacaaccaca 180

tcttcacaat gtccagtagc cgagtcacc agttgtcaca gattgggggtg gtagcttcca 240

ggttgtacct aagtttggag ttagacttga aatgaaagtg ctagcacagt tgtgtttgtg 300

gtttgtact tccatagttt acttgacatg gttcagactg accaagcata gttttcagt 360

acagtctgtg gcagttgaag ctgtgaaatg tgctagggcg agcatttgtc ctcgtgtgtg 420
 gtgactttga gtgtaacagc gtgatctgac caatagtaca cacagacg 468

<210> 496

<211> 1660

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (75).. (1217)

<400> 496

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 cagcctagcc cggg atg aga aat tgc aaa atg gcc cga gtc gcc agt gtg 110
 Met Arg Asn Cys Lys Met Ala Arg Val Ala Ser Val
 1 5 10
 cta ggg ctg gtc atg ctc agc gtg gcc ctg ctg att tta tgc ctt atc 158
 Leu Gly Leu Val Met Leu Ser Val Ala Leu Leu Ile Leu Ser Leu Ile
 15 20 25
 agc tac gtg tct ctg aaa aag gag aac atc ttc acc act ccc aag tac 206
 Ser Tyr Val Ser Leu Lys Lys Glu Asn Ile Phe Thr Thr Pro Lys Tyr
 30 35 40
 gcc agc ccg ggg gcg ccc cga atg tac atg ttc cac gcg gga ttc cgg 254
 Ala Ser Pro Gly Ala Pro Arg Met Tyr Met Phe His Ala Gly Phe Arg
 45 50 55 60
 tca cag ttt gca ctg aag ttt cta gac cag tca ttt gtg ccc att acg 302
 Ser Gln Phe Ala Leu Lys Phe Leu Asp Gln Ser Phe Val Pro Ile Thr
 65 70 75

aat tct ctc acc cat gaa ctc caa gag aaa cct tct aaa tgg aca ttt 350
 Asn Ser Leu Thr His Glu Leu Gln Glu Lys Pro Ser Lys Trp Thr Phe
 80 85 90
 aat cgg aca gcg ttt tta cat caa agg caa gaa att ctt cag cat gtc 398
 Asn Arg Thr Ala Phe Leu His Gln Arg Gln Glu Ile Leu Gln His Val
 95 100 105
 gat gta ata aaa aat ttt tct ttt acc aag agt agt gtt cgg att gga 446
 Asp Val Ile Lys Asn Phe Ser Leu Thr Lys Ser Ser Val Arg Ile Gly
 110 115 120
 caa cta atg cat tat gat tat tcc agc cat aaa tat gtc ttc tcg att 494
 Gln Leu Met His Tyr Asp Tyr Ser Ser His Lys Tyr Val Phe Ser Ile
 125 130 135 140
 agc aat aac ttc cgg tcc ctg ctc cca gat gtg tcg ccc att atg aat 542
 Ser Asn Asn Phe Arg Ser Leu Leu Pro Asp Val Ser Pro Ile Met Asn
 145 150 155
 aag cgt tat aat gtt tgt gct gtg gtt gga aac agt gga atc ttg aca 590
 Lys Arg Tyr Asn Val Cys Ala Val Val Gly Asn Ser Gly Ile Leu Thr
 160 165 170
 ggg agt cag tgt gga caa gaa ata gat aaa tca gat ttt gtt tct cga 638
 Gly Ser Gln Cys Gly Gln Glu Ile Asp Lys Ser Asp Phe Val Ser Arg
 175 180 185
 tgc aat ttt gcc ccg aca gag gct ttc cac aaa gat gtt gga agg aaa 686
 Cys Asn Phe Ala Pro Thr Glu Ala Phe His Lys Asp Val Gly Arg Lys
 190 195 200
 acc aac ctc aca acc ttc aat ccg agc atc tta gag aaa tat tac aac 734
 Thr Asn Leu Thr Thr Phe Asn Pro Ser Ile Leu Glu Lys Tyr Tyr Asn
 205 210 215 220
 aat ctt tta acc att cag gac cgt aac aac ttc ttc ctc agt tta aaa 782
 Asn Leu Leu Thr Ile Gln Asp Arg Asn Asn Phe Phe Leu Ser Leu Lys

225	230	235	
aag ctt gat ggg gcc ata ctt tgg atc cct gca ttt ttc ttc cac act	830		
Lys Leu Asp Gly Ala Ile Leu Trp Ile Pro Ala Phe Phe Phe His Thr			
240	245	250	
tct gca act gta acg aga acg cta gtg gat ttt ttt gtt gag cac aga	878		
Ser Ala Thr Val Thr Arg Thr Leu Val Asp Phe Phe Val Glu His Arg			
255	260	265	
ggg cag tta aag gtc cag ttg gct tgg cct gga aat atc atg caa cat	926		
Gly Gln Leu Lys Val Gln Leu Ala Trp Pro Gly Asn Ile Met Gln His			
270	275	280	
gtc aac agg tac tgg aaa aac aaa cac ctg tca ccc aaa cga ctg agc	974		
Val Asn Arg Tyr Trp Lys Asn Lys His Leu Ser Pro Lys Arg Leu Ser			
285	290	295	300
aca ggt atc cta atg tat act ctt gca tct gca ata tgt gaa gag atc	1022		
Thr Gly Ile Leu Met Tyr Thr Leu Ala Ser Ala Ile Cys Glu Glu Ile			
305	310	315	
cac ttg tac ggt ttc tgg ccc ttt gga ttt gac ccc aac acc agg gag	1070		
His Leu Tyr Gly Phe Trp Pro Phe Gly Phe Asp Pro Asn Thr Arg Glu			
320	325	330	
gat ctg ccc tac cac tac tat gac aaa aaa gga acc aaa ttt acc acc	1118		
Asp Leu Pro Tyr His Tyr Tyr Asp Lys Lys Gly Thr Lys Phe Thr Thr			
335	340	345	
aag tgg cag gag tct cac cag ctg cct gct gag ttt cag ctg ctc tat	1166		
Lys Trp Gln Glu Ser His Gln Leu Pro Ala Glu Phe Gln Leu Leu Tyr			
350	355	360	
cga atg cat ggg gaa ggg ctc acg aag ctc act ctg tca cac tgt gcc	1214		
Arg Met His Gly Glu Gly Leu Thr Lys Leu Thr Leu Ser His Cys Ala			
365	370	375	380
taa gaactccaaa tggaaagtgc caaacggctg attaaaaagt gccctcaccc	1267		

ccaaaccaaa ttgaatagtc tccagaacag aacccataga caatctggca aagcctgtct 1327
 gccacttaca aggaaagacg ccttctcttc cttttttgca ctgctctttg aatggcttta 1387
 acaaacttag gacagggtgca ttgaagccgt gtagtttaga cttagatggg aaaaggttat 1447
 attgcatttg gaagtatgct gcacagagaa tagcttgaaa tagttctaag ttigtatttt 1507
 aataataaac cgactcccat gtgaatgagg aatgtgactg tcatctcctc cttcttactt 1567
 tgatatagtc ctcaacaacca gggagctctg gccagctcca gcaggatctc tttagccaag 1627
 gggatcagaa tcttcaaaaa aaaaaaaaaa aaa 1660

<210> 497

<211> 380

<212> PRT

<213> Mus musculus

<400> 497

Met	Arg	Asn	Cys	Lys	Met	Ala	Arg	Val	Ala	Ser	Val	Leu	Gly	Leu	Val
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Met	Leu	Ser	Val	Ala	Leu	Leu	Ile	Leu	Ser	Leu	Ile	Ser	Tyr	Val	Ser
			20					25				30			
Leu	Lys	Lys	Glu	Asn	Ile	Phe	Thr	Thr	Pro	Lys	Tyr	Ala	Ser	Pro	Gly
			35					40				45			
Ala	Pro	Arg	Met	Tyr	Met	Phe	His	Ala	Gly	Phe	Arg	Ser	Gln	Phe	Ala
			50					55				60			
Leu	Lys	Phe	Leu	Asp	Gln	Ser	Phe	Val	Pro	Ile	Thr	Asn	Ser	Leu	Thr
			65					70				75			80
His	Glu	Leu	Gln	Glu	Lys	Pro	Ser	Lys	Trp	Thr	Phe	Asn	Arg	Thr	Ala
			85					90				95			
Phe	Leu	His	Gln	Arg	Gln	Glu	Ile	Leu	Gln	His	Val	Asp	Val	Ile	Lys
			100					105				110			
Asn	Phe	Ser	Leu	Thr	Lys	Ser	Ser	Val	Arg	Ile	Gly	Gln	Leu	Met	His

115	120	125
Tyr Asp Tyr Ser Ser His Lys Tyr Val Phe Ser Ile Ser Asn Asn Phe		
130	135	140
Arg Ser Leu Leu Pro Asp Val Ser Pro Ile Met Asn Lys Arg Tyr Asn		
145	150	155
Val Cys Ala Val Val Gly Asn Ser Gly Ile Leu Thr Gly Ser Gln Cys		
165	170	175
Gly Gln Glu Ile Asp Lys Ser Asp Phe Val Ser Arg Cys Asn Phe Ala		
180	185	190
Pro Thr Glu Ala Phe His Lys Asp Val Gly Arg Lys Thr Asn Leu Thr		
195	200	205
Thr Phe Asn Pro Ser Ile Leu Glu Lys Tyr Tyr Asn Asn Leu Leu Thr		
210	215	220
Ile Gln Asp Arg Asn Asn Phe Phe Leu Ser Leu Lys Lys Leu Asp Gly		
225	230	235
Ala Ile Leu Trp Ile Pro Ala Phe Phe Phe His Thr Ser Ala Thr Val		
245	250	255
Thr Arg Thr Leu Val Asp Phe Phe Val Glu His Arg Gly Gln Leu Lys		
260	265	270
Val Gln Leu Ala Trp Pro Gly Asn Ile Met Gln His Val Asn Arg Tyr		
275	280	285
Trp Lys Asn Lys His Leu Ser Pro Lys Arg Leu Ser Thr Gly Ile Leu		
290	295	300
Met Tyr Thr Leu Ala Ser Ala Ile Cys Glu Glu Ile His Leu Tyr Gly		
305	310	315
Phe Trp Pro Phe Gly Phe Asp Pro Asn Thr Arg Glu Asp Leu Pro Tyr		
325	330	335
His Tyr Tyr Asp Lys Lys Gly Thr Lys Phe Thr Thr Lys Trp Gln Glu		
340	345	350

Ser His Gln Leu Pro Ala Glu Phe Gln Leu Leu Tyr Arg Met His Gly

355

360

365

Glu Gly Leu Thr Lys Leu Thr Leu Ser His Cys Ala

370

375

380

<210> 498

<211> 897

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (897)

<400> 498

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Met Arg Asp Arg Thr His Glu Leu Arg Gln Gly Asp Asn Ile Ser Asp

1

5

10

15

gat gaa gat gag gtt cga gtc gcg ctg gtg gtg cac tca ggt gct gcc 96

Asp Glu Asp Glu Val Arg Val Ala Leu Val Val His Ser Gly Ala Ala

20

25

30

cgg ttg ggc agc ccg gac gac gag ttc ttc cag aag gtg cag aca att 144

Arg Leu Gly Ser Pro Asp Asp Glu Phe Phe Gln Lys Val Gln Thr Ile

35

40

45

cgg cag act atg gcc aaa ctg gag agt aaa gtc cgg gag ttg gag aaa 192

Arg Gln Thr Met Ala Lys Leu Glu Ser Lys Val Arg Glu Leu Glu Lys

50

55

60

cag cag gtc acc atc ctg gcc acg cct ctt ccc gag gag agc atg aag 240

Gln Gln Val Thr Ile Leu Ala Thr Pro Leu Pro Glu Glu Ser Met Lys

65	70	75	80	
cag ggc ctg cag aac ctg cga gag gag atc aaa cag ctg ggg aga gag	288			
Gln Gly Leu Gln Asn Leu Arg Glu Glu Ile Lys Gln Leu Gly Arg Glu				
85	90	95		
gtc cgg gcg cag cta aaa gcc ata gag ccc cag aag gag gaa gct gat	336			
Val Arg Ala Gln Leu Lys Ala Ile Glu Pro Gln Lys Glu Glu Ala Asp				
100	105	110		
gag aat tac aac tca gtc aac aca agg atg aag aaa acc cag cat gga	384			
Glu Asn Tyr Asn Ser Val Asn Thr Arg Met Lys Lys Thr Gln His Gly				
115	120	125		
gtc ctg tcc cag caa ttt gtc gag ctc atc aac aag tgc aac tca atg	432			
Val Leu Ser Gln Gln Phe Val Glu Leu Ile Asn Lys Cys Asn Ser Met				
130	135	140		
cag tcc gaa tac cga gag aag aat gtg gag cgg atc cgg agg cag ctg	480			
Gln Ser Glu Tyr Arg Glu Lys Asn Val Glu Arg Ile Arg Arg Gln Leu				
145	150	155	160	
aag atc acc aat gct gga atg gtg tct gac gag gag ctg gaa cag atg	528			
Lys Ile Thr Asn Ala Gly Met Val Ser Asp Glu Glu Leu Glu Gln Met				
165	170	175		
ctg gac agt ggg cag agt gag gtg ttt gtg tct aat atc ctg aag gac	576			
Leu Asp Ser Gly Gln Ser Glu Val Phe Val Ser Asn Ile Leu Lys Asp				
180	185	190		
acg cag gtg act cgg cag gcc ctg aat gag atc tct gcg cgg cac agt	624			
Thr Gln Val Thr Arg Gln Ala Leu Asn Glu Ile Ser Ala Arg His Ser				
195	200	205		
gag atc cag cag ttg gag cgc agt atc cga gag ctc cat gag atc ttt	672			
Glu Ile Gln Gln Leu Glu Arg Ser Ile Arg Glu Leu His Glu Ile Phe				
210	215	220		
acg ttt cta gct acg gag gtg gag atg cag ggg gag atg atc aac cgc	720			

Thr Phe Leu Ala Thr Glu Val Glu Met Gln Gly Glu Met Ile Asn Arg
 225 230 235 240
 atc gag aag aac atc ctg agc tcg gcc gac tac gtg gaa cgt ggg caa 768
 Ile Glu Lys Asn Ile Leu Ser Ser Ala Asp Tyr Val Glu Arg Gly Gln
 245 250 255
 gag cac gtc aag ata gcc cta gag aat cag aag aag gcg agg aag aaa 816
 Glu His Val Lys Ile Ala Leu Glu Asn Gln Lys Lys Ala Arg Lys Lys
 260 265 270
 aaa gtc atg att gcc atc tgt gtc tct gtc act gtt ctc atc ttg gct 864
 Lys Val Met Ile Ala Ile Cys Val Ser Val Thr Val Leu Ile Leu Ala
 275 280 285
 gtc atc att ggc atc acc ata acc gtt gga taa 897
 Val Ile Ile Gly Ile Thr Ile Thr Val Gly
 290 295

<210> 499

<211> 298

<212> PRT

<213> Mus musculus

<400> 499

Met Arg Asp Arg Thr His Glu Leu Arg Gln Gly Asp Asn Ile Ser Asp
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 Asp Glu Asp Glu Val Arg Val Ala Leu Val Val His Ser Gly Ala Ala
 20 25 30
 Arg Leu Gly Ser Pro Asp Asp Glu Phe Phe Gln Lys Val Gln Thr Ile
 35 40 45
 Arg Gln Thr Met Ala Lys Leu Glu Ser Lys Val Arg Glu Leu Glu Lys
 50 55 60

Gln Gln Val Thr Ile Leu Ala Thr Pro Leu Pro Glu Glu Ser Met Lys
 65 70 75 80
 Gln Gly Leu Gln Asn Leu Arg Glu Glu Ile Lys Gln Leu Gly Arg Glu
 85 90 95
 Val Arg Ala Gln Leu Lys Ala Ile Glu Pro Gln Lys Glu Glu Ala Asp
 100 105 110
 Glu Asn Tyr Asn Ser Val Asn Thr Arg Met Lys Lys Thr Gln His Gly
 115 120 125
 Val Leu Ser Gln Gln Phe Val Glu Leu Ile Asn Lys Cys Asn Ser Met
 130 135 140
 Gln Ser Glu Tyr Arg Glu Lys Asn Val Glu Arg Ile Arg Arg Gln Leu
 145 150 155 160
 Lys Ile Thr Asn Ala Gly Met Val Ser Asp Glu Glu Leu Glu Gln Met
 165 170 175
 Leu Asp Ser Gly Gln Ser Glu Val Phe Val Ser Asn Ile Leu Lys Asp
 180 185 190
 Thr Gln Val Thr Arg Gln Ala Leu Asn Glu Ile Ser Ala Arg His Ser
 195 200 205
 Glu Ile Gln Gln Leu Glu Arg Ser Ile Arg Glu Leu His Glu Ile Phe
 210 215 220
 Thr Phe Leu Ala Thr Glu Val Glu Met Gln Gly Glu Met Ile Asn Arg
 225 230 235 240
 Ile Glu Lys Asn Ile Leu Ser Ser Ala Asp Tyr Val Glu Arg Gly Gln
 245 250 255
 Glu His Val Lys Ile Ala Leu Glu Asn Gln Lys Lys Ala Arg Lys Lys
 260 265 270
 Lys Val Met Ile Ala Ile Cys Val Ser Val Thr Val Leu Ile Leu Ala
 275 280 285
 Val Ile Ile Gly Ile Thr Ile Thr Val Gly

290

295

<210> 500

<211> 1767

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (42).. (893)

<400> 500

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Met Ala Val Pro Pro

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aca tac gcc gat ctt ggc aag tcc gcc agg gat gtc ttc acc aag ggc 104

Thr Tyr Ala Asp Leu Gly Lys Ser Ala Arg Asp Val Phe Thr Lys Gly

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15

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tac ggc ttt ggc tta ata aaa ctt gat ttg aaa acg aag tca gag aat 152

Tyr Gly Phe Gly Leu Ile Lys Leu Asp Leu Lys Thr Lys Ser Glu Asn

25

30

35

gga ttg gaa ttt acc agc tca ggc tct gcc aac acg gaa acc acc aaa 200

Gly Leu Glu Phe Thr Ser Ser Gly Ser Ala Asn Thr Glu Thr Thr Lys

40

45

50

gtg aac ggc agc ctg gaa acc aag tac aga tgg act gag tat ggg ctg 248

Val Asn Gly Ser Leu Glu Thr Lys Tyr Arg Trp Thr Glu Tyr Gly Leu

55

60

65

acg ttt aca gag aag tgg aac aca gac aac acc ctg ggc act gag atc 296

Thr Phe Thr Glu Lys Trp Asn Thr Asp Asn Thr Leu Gly Thr Glu Ile

70	75	80	85	
act gtg gaa gac cag ctt gct cgt gga ctg aag ctc acc ttt gat tcg	344			
Thr Val Glu Asp Gln Leu Ala Arg Gly Leu Lys Leu Thr Phe Asp Ser				
90	95	100		
tca ttc tcg ccg aac act ggg aaa aaa aat gct aaa atc aag aca ggg	392			
Ser Phe Ser Pro Asn Thr Gly Lys Lys Asn Ala Lys Ile Lys Thr Gly				
105	110	115		
tac aag agg gag cac atc aac ctc ggc tgt gac gtg gac ttt gac atc	440			
Tyr Lys Arg Glu His Ile Asn Leu Gly Cys Asp Val Asp Phe Asp Ile				
120	125	130		
gct ggg ccc tcg atc cgg ggc gct ctg gtg ctt ggc tat gag ggt tgg	488			
Ala Gly Pro Ser Ile Arg Gly Ala Leu Val Leu Gly Tyr Glu Gly Trp				
135	140	145		
ctg gct ggc tac cag atg aat ttt gag acc tcg aag tcc cga gtg acc	536			
Leu Ala Gly Tyr Gln Met Asn Phe Glu Thr Ser Lys Ser Arg Val Thr				
150	155	160	165	
cag agc aac ttc gca gtt ggc tat aag acg gat gaa ttc cag ctt cat	584			
Gln Ser Asn Phe Ala Val Gly Tyr Lys Thr Asp Glu Phe Gln Leu His				
170	175	180		
act aat gtg aat gac ggg aca gag ttt ggt ggc tcc att tac cag aag	632			
Thr Asn Val Asn Asp Gly Thr Glu Phe Gly Gly Ser Ile Tyr Gln Lys				
185	190	195		
gtg aac aag aag ttg gag act gct gtc aat ctc gcc tgg act gca gga	680			
Val Asn Lys Lys Leu Glu Thr Ala Val Asn Leu Ala Trp Thr Ala Gly				
200	205	210		
aac agt aac act cgc ttc gga ata gca gcc aag tat cag gtc gac cct	728			
Asn Ser Asn Thr Arg Phe Gly Ile Ala Ala Lys Tyr Gln Val Asp Pro				
215	220	225		
gat gcc tgc ttt tcg gcc aaa gtg aac aac tct agc ctg att ggc tta	776			

Asp Ala Cys Phe Ser Ala Lys Val Asn Asn Ser Ser Leu Ile Gly Leu
 230 235 240 245
 ggg tac act cag acc cta aaa cca ggt atc aaa ctg acg ttg tca gcc 824
 Gly Tyr Thr Gln Thr Leu Lys Pro Gly Ile Lys Leu Thr Leu Ser Ala
 250 255 260
 ctg ctc gat ggc aag aac gtc aat gcg ggt ggc cac aag ctt ggc cta 872
 Leu Leu Asp Gly Lys Asn Val Asn Ala Gly Gly His Lys Leu Gly Leu
 265 270 275
 gga ctg gaa ttt caa gca taa atgaatattg tacaatcggtt taatttttaa 923
 Gly Leu Glu Phe Gln Ala
 280
 ctatitttgca gcatagctac cttcagaatt tagtgiacct tttaatgttg tatgttgggg 983
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 ctcc 1767

<210> 501

<211> 283

<212> PRT

<213> Mus musculus

<400> 501

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Thr Lys Ser Glu Asn Gly Leu Glu Phe Thr Ser Ser Gly Ser Ala Asn
        35             40             45
Thr Glu Thr Thr Lys Val Asn Gly Ser Leu Glu Thr Lys Tyr Arg Trp
      50             55             60
Thr Glu Tyr Gly Leu Thr Phe Thr Glu Lys Trp Asn Thr Asp Asn Thr
      65             70             75             80
Leu Gly Thr Glu Ile Thr Val Glu Asp Gln Leu Ala Arg Gly Leu Lys
          85             90             95
Leu Thr Phe Asp Ser Ser Phe Ser Pro Asn Thr Gly Lys Lys Asn Ala
        100             105             110
Lys Ile Lys Thr Gly Tyr Lys Arg Glu His Ile Asn Leu Gly Cys Asp
        115             120             125
Val Asp Phe Asp Ile Ala Gly Pro Ser Ile Arg Gly Ala Leu Val Leu
        130             135             140
Gly Tyr Glu Gly Trp Leu Ala Gly Tyr Gln Met Asn Phe Glu Thr Ser
      145             150             155             160
Lys Ser Arg Val Thr Gln Ser Asn Phe Ala Val Gly Tyr Lys Thr Asp
          165             170             175
Glu Phe Gln Leu His Thr Asn Val Asn Asp Gly Thr Glu Phe Gly Gly
          180             185             190
Ser Ile Tyr Gln Lys Val Asn Lys Lys Leu Glu Thr Ala Val Asn Leu

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195	200	205
Ala Trp Thr Ala Gly Asn Ser Asn Thr Arg Phe Gly Ile Ala Ala Lys		
210	215	220
Tyr Gln Val Asp Pro Asp Ala Cys Phe Ser Ala Lys Val Asn Asn Ser		
225	230	235
Ser Leu Ile Gly Leu Gly Tyr Thr Gln Thr Leu Lys Pro Gly Ile Lys		
	245	250
Leu Thr Leu Ser Ala Leu Leu Asp Gly Lys Asn Val Asn Ala Gly Gly		255
	260	265
His Lys Leu Gly Leu Gly Leu Glu Phe Gln Ala		270
	275	280

<210> 502

<211> 264

<212> DNA

<213> Mus musculus

<400> 502

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tcggcaaggc acctccigga aggcctcctg cagaaggacc ggaccaagag gctgggtgcc 180
aaggatgact ttgtgagtgt tggttgtcct gctgtcatgg gaccttgggg aagaaggttg 240
actttgtgac ctigtattga gttc                                     264

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<210> 503

<211> 1707

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (113).. (1549)

<400> 503

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 gatTTTTtctc tgcccccttct caaatcatcg gcagtagaaa agagaagaaa ac atg tca 118

Met Ser

1

gga cac aaa tgt tat tcc tgg gag ttg cag gac cgg ttt gct caa gat 166
 Gly His Lys Cys Tyr Ser Trp Glu Leu Gln Asp Arg Phe Ala Gln Asp

5

10

15

aag tca gtt gtc aat aag atg cag cag aaa tat tgg gag acc aag cag 214
 Lys Ser Val Val Asn Lys Met Gln Gln Lys Tyr Trp Glu Thr Lys Gln

20

25

30

gcc ttt atc aaa gcc acg ggg aag aag gaa gat gaa cat gtg gtt gct 262
 Ala Phe Ile Lys Ala Thr Gly Lys Lys Glu Asp Glu His Val Val Ala

35

40

45

50

tct gat gca gac ctg gat gcc aag ctg gag ctg ttt cac tca atc cag 310
 Ser Asp Ala Asp Leu Asp Ala Lys Leu Glu Leu Phe His Ser Ile Gln

55

60

65

aga acc tgt ctg gac ttg tct aaa gca atc gtg ctc tat caa aag aga 358
 Arg Thr Cys Leu Asp Leu Ser Lys Ala Ile Val Leu Tyr Gln Lys Arg

70

75

80

ata tgt ttc ttg tct caa gag gaa aat gaa ctg gga aag ttt ctt cga 406
 Ile Cys Phe Leu Ser Gln Glu Glu Asn Glu Leu Gly Lys Phe Leu Arg

85

90

95

tct caa ggc ttc caa gac aaa acc cga gca gga aaa atg atg caa gcc 454
 Ser Gln Gly Phe Gln Asp Lys Thr Arg Ala Gly Lys Met Met Gln Ala

100	105	110	
acg ggc aag gcc ctc tgc ttt tcc tcc cag caa agg ttg gcc ttg aga	502		
Thr Gly Lys Ala Leu Cys Phe Ser Ser Gln Gln Arg Leu Ala Leu Arg			
115	120	125	130
aac cct ttg tgt cga ttt cac caa gaa gta gaa act ttt aga cat cgg	550		
Asn Pro Leu Cys Arg Phe His Gln Glu Val Glu Thr Phe Arg His Arg			
135	140	145	
gcc atc tct gat acc tgg ctg aca gtg aac cgc atg gag cag tac agg	598		
Ala Ile Ser Asp Thr Trp Leu Thr Val Asn Arg Met Glu Gln Tyr Arg			
150	155	160	
aca gaa tac aga gga gcg ttg tta tgg atg aag gac gtg tct cag gaa	646		
Thr Glu Tyr Arg Gly Ala Leu Leu Trp Met Lys Asp Val Ser Gln Glu			
165	170	175	
ctt gat cca gac ctc tac aag caa atg gag aag ttc agg aag gtg cag	694		
Leu Asp Pro Asp Leu Tyr Lys Gln Met Glu Lys Phe Arg Lys Val Gln			
180	185	190	
aca caa gtc cgc ctt gcg aaa aaa aac ttt gac aag ttg aag atg gat	742		
Thr Gln Val Arg Leu Ala Lys Lys Asn Phe Asp Lys Leu Lys Met Asp			
195	200	205	210
gtg tgt caa aag gtg gat ctt ctt gga gca agc aga tgt aac ctc tta	790		
Val Cys Gln Lys Val Asp Leu Leu Gly Ala Ser Arg Cys Asn Leu Leu			
215	220	225	
tct cac atg cta gca aca tac cag acc act ctg ctc cac ttt tgg gag	838		
Ser His Met Leu Ala Thr Tyr Gln Thr Thr Leu Leu His Phe Trp Glu			
230	235	240	
aaa act tct cac acc atg gca gcc att cat gag agc ttc aaa ggt tat	886		
Lys Thr Ser His Thr Met Ala Ala Ile His Glu Ser Phe Lys Gly Tyr			
245	250	255	
caa cca tat gaa ttc aca acg tta aag agc tta caa gac ccc atg aag	934		

Gln	Pro	Tyr	Glu	Phe	Thr	Thr	Leu	Lys	Ser	Leu	Gln	Asp	Pro	Met	Lys		
260							265				270						
aag	cta	gtt	gag	aag	gaa	ggg	aag	aag	acc	tcc	tgg	agg	gaa	aac	cgg	982	
Lys	Leu	Val	Glu	Lys	Glu	Gly	Lys	Lys	Thr	Ser	Trp	Arg	Glu	Asn	Arg		
275					280					285					290		
gag	gct	gtg	gca	cca	gag	ccg	agg	cag	tta	att	tct	ttg	gag	gat	gag	1030	
Glu	Ala	Val	Ala	Pro	Glu	Pro	Arg	Gln	Leu	Ile	Ser	Leu	Glu	Asp	Glu		
				295				300						305			
cac	aaa	gat	tca	tct	act	tat	aag	act	gaa	gag	gga	aca	agc	gtt	ttg	1078	
His	Lys	Asp	Ser	Ser	Thr	Tyr	Lys	Thr	Glu	Glu	Gly	Thr	Ser	Val	Leu		
				310				315						320			
tct	tcc	gta	gac	aaa	ggg	tct	gta	cat	gac	aca	tgc	tca	gga	ccc	ata	1126	
Ser	Ser	Val	Asp	Lys	Gly	Ser	Val	His	Asp	Thr	Cys	Ser	Gly	Pro	Ile		
				325				330						335			
gat	gaa	cta	tta	gac	ggg	aaa	ccc	gag	gaa	gcg	tgc	ctg	ggg	ccc	acg	1174	
Asp	Glu	Leu	Leu	Asp	Gly	Lys	Pro	Glu	Glu	Ala	Cys	Leu	Gly	Pro	Thr		
				340				345						350			
gca	ggg	acc	cca	gaa	cct	gaa	agt	ggg	gac	aag	gat	gac	ctc	ttg	ctg	1222	
Ala	Gly	Thr	Pro	Glu	Pro	Glu	Ser	Gly	Asp	Lys	Asp	Asp	Leu	Leu	Leu		
355					360					365					370		
ttg	aat	gag	atc	ttc	agc	act	tcc	tgc	ctg	gat	gag	gga	gag	ttc	agc	1270	
Leu	Asn	Glu	Ile	Phe	Ser	Thr	Ser	Cys	Leu	Asp	Glu	Gly	Glu	Phe	Ser		
					375					380					385		
aga	gag	tgg	gct	gca	gtg	ttt	gga	gat	gac	cgg	cta	aag	gag	cca	gca	1318	
Arg	Glu	Trp	Ala	Ala	Val	Phe	Gly	Asp	Asp	Arg	Leu	Lys	Glu	Pro	Ala		
				390						395					400		
ccc	atg	ggg	gcc	caa	gga	gag	cca	gac	ccc	aag	ccc	cag	ata	ggc	tcc	1366	
Pro	Met	Gly	Ala	Gln	Gly	Glu	Pro	Asp	Pro	Lys	Pro	Gln	Ile	Gly	Ser		
				405						410					415		

gga ttc ctt ccg tca cag ctt tta gac caa aat atg aaa gat ctc cag 1414
 Gly Phe Leu Pro Ser Gln Leu Leu Asp Gln Asn Met Lys Asp Leu Gln
 420 425 430
 gcc tct ctg caa gag cct gcc aag gct gcc tcg gac ctg act gcc tgg 1462
 Ala Ser Leu Gln Glu Pro Ala Lys Ala Ala Ser Asp Leu Thr Ala Trp
 435 440 445 450
 ttc agc ctc ttt gct gac ctc gac ccc tta tca aac cct gat gct gtt 1510
 Phe Ser Leu Phe Ala Asp Leu Asp Pro Leu Ser Asn Pro Asp Ala Val
 455 460 465
 ggg aaa act gat aaa gaa cac gaa ttg ctc aat gca tga gtctgcaacc 1559
 Gly Lys Thr Asp Lys Glu His Glu Leu Leu Asn Ala
 470 475
 ttcaacaggg agccctcggg ccactccgcg gcacctcatc cagggttgc agaagtctaa 1619
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 ccctgtttct atcgctataa aaaaaaaa 1707

<210> 504

<211> 478

<212> PRT

<213> Mus musculus

<400> 504

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 Gln Asp Lys Ser Val Val Asn Lys Met Gln Gln Lys Tyr Trp Glu Thr
 20 25 30
 Lys Gln Ala Phe Ile Lys Ala Thr Gly Lys Lys Glu Asp Glu His Val
 35 40 45
 Val Ala Ser Asp Ala Asp Leu Asp Ala Lys Leu Glu Leu Phe His Ser

50	55	60
Ile Gln Arg Thr Cys Leu Asp Leu Ser Lys Ala Ile Val Leu Tyr Gln		
65	70	75
Lys Arg Ile Cys Phe Leu Ser Gln Glu Glu Asn Glu Leu Gly Lys Phe		80
	85	90
Leu Arg Ser Gln Gly Phe Gln Asp Lys Thr Arg Ala Gly Lys Met Met		95
	100	105
Gln Ala Thr Gly Lys Ala Leu Cys Phe Ser Ser Gln Gln Arg Leu Ala		110
	115	120
Leu Arg Asn Pro Leu Cys Arg Phe His Gln Glu Val Glu Thr Phe Arg		125
	130	135
His Arg Ala Ile Ser Asp Thr Trp Leu Thr Val Asn Arg Met Glu Gln		140
145	150	155
Tyr Arg Thr Glu Tyr Arg Gly Ala Leu Leu Trp Met Lys Asp Val Ser		160
	165	170
Gln Glu Leu Asp Pro Asp Leu Tyr Lys Gln Met Glu Lys Phe Arg Lys		175
	180	185
Val Gln Thr Gln Val Arg Leu Ala Lys Lys Asn Phe Asp Lys Leu Lys		190
	195	200
Met Asp Val Cys Gln Lys Val Asp Leu Leu Gly Ala Ser Arg Cys Asn		205
	210	215
Leu Leu Ser His Met Leu Ala Thr Tyr Gln Thr Thr Leu Leu His Phe		220
225	230	235
Trp Glu Lys Thr Ser His Thr Met Ala Ala Ile His Glu Ser Phe Lys		240
	245	250
Gly Tyr Gln Pro Tyr Glu Phe Thr Thr Leu Lys Ser Leu Gln Asp Pro		255
	260	265
Met Lys Lys Leu Val Glu Lys Glu Gly Lys Lys Thr Ser Trp Arg Glu		270
	275	280
		285

Asn Arg Glu Ala Val Ala Pro Glu Pro Arg Gln Leu Ile Ser Leu Glu
 290 295 300
 Asp Glu His Lys Asp Ser Ser Thr Tyr Lys Thr Glu Glu Gly Thr Ser
 305 310 315 320
 Val Leu Ser Ser Val Asp Lys Gly Ser Val His Asp Thr Cys Ser Gly
 325 330 335
 Pro Ile Asp Glu Leu Leu Asp Gly Lys Pro Glu Glu Ala Cys Leu Gly
 340 345 350
 Pro Thr Ala Gly Thr Pro Glu Pro Glu Ser Gly Asp Lys Asp Asp Leu
 355 360 365
 Leu Leu Leu Asn Glu Ile Phe Ser Thr Ser Cys Leu Asp Glu Gly Glu
 370 375 380
 Phe Ser Arg Glu Trp Ala Ala Val Phe Gly Asp Asp Arg Leu Lys Glu
 385 390 395 400
 Pro Ala Pro Met Gly Ala Gln Gly Glu Pro Asp Pro Lys Pro Gln Ile
 405 410 415
 Gly Ser Gly Phe Leu Pro Ser Gln Leu Leu Asp Gln Asn Met Lys Asp
 420 425 430
 Leu Gln Ala Ser Leu Gln Glu Pro Ala Lys Ala Ala Ser Asp Leu Thr
 435 440 445
 Ala Trp Phe Ser Leu Phe Ala Asp Leu Asp Pro Leu Ser Asn Pro Asp
 450 455 460
 Ala Val Gly Lys Thr Asp Lys Glu His Glu Leu Leu Asn Ala
 465 470 475

<210> 505

<211> 1410

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (40).. (1062)

<400> 505

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                                   1           5
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Gln Leu Arg Gln Glu Ala Glu Gln Leu Lys Asn Gln Ile Arg Asp Ala
              10              15              20
cgt aaa gcg tgt gcc gat gcg act ctt tct cag atc aca aac aat att      150
Arg Lys Ala Cys Ala Asp Ala Thr Leu Ser Gln Ile Thr Asn Asn Ile
              25              30              35
gat cca gtg gga aga atc caa atg cgg acc agg aga aca ctg agg ggg      198
Asp Pro Val Gly Arg Ile Gln Met Arg Thr Arg Arg Thr Leu Arg Gly
              40              45              50
cat ctg gca aag att tat gcc atg cac tgg ggc aca gac tca agg ctc      246
His Leu Ala Lys Ile Tyr Ala Met His Trp Gly Thr Asp Ser Arg Leu
              55              60              65
ctt gtc agc gcc tct cag gat gga aaa ctc atc atc tgg gac agt tat      294
Leu Val Ser Ala Ser Gln Asp Gly Lys Leu Ile Ile Trp Asp Ser Tyr
              70              75              80              85
acc aca aac aag gtt cat gcc atc cct ctg cgc tcc tct tgg gtc atg      342
Thr Thr Asn Lys Val His Ala Ile Pro Leu Arg Ser Ser Trp Val Met
              90              95              100
acc tgc gca tac gct cct tct ggg aat tat gtg gcc tgt ggt ggc ctg      390
Thr Cys Ala Tyr Ala Pro Ser Gly Asn Tyr Val Ala Cys Gly Gly Leu

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105	110	115	
gat aac atc tgc tcc att tac aac ctg aaa act cgt gaa ggg aat gtg			438
Asp Asn Ile Cys Ser Ile Tyr Asn Leu Lys Thr Arg Glu Gly Asn Val			
120	125	130	
cgt gtg agt cgt gag ctg gcg gga cac aca ggt tat ctg tcc tgt tgc			486
Arg Val Ser Arg Glu Leu Ala Gly His Thr Gly Tyr Leu Ser Cys Cys			
135	140	145	
cgg ttc ctg gat gac aat cag ata gtt acc agt tct gga gac acc aca			534
Arg Phe Leu Asp Asp Asn Gln Ile Val Thr Ser Ser Gly Asp Thr Thr			
150	155	160	165
tgt gcc ctg tgg gac atc gag act ggc cag cag aca acc aca ttt act			582
Cys Ala Leu Trp Asp Ile Glu Thr Gly Gln Gln Thr Thr Thr Phe Thr			
170	175	180	
gga cac act gga gat gtc atg agc ctg tct ctt gct cct gac acc aga			630
Gly His Thr Gly Asp Val Met Ser Leu Ser Leu Ala Pro Asp Thr Arg			
185	190	195	
ctg ttt gtc tct ggt gct tgt gat gct tca gcc aag ctc tgg gat gtc			678
Leu Phe Val Ser Gly Ala Cys Asp Ala Ser Ala Lys Leu Trp Asp Val			
200	205	210	
cga gaa ggg atg tgc cgg cag acc ttt aca gga cac gag tct gac atc			726
Arg Glu Gly Met Cys Arg Gln Thr Phe Thr Gly His Glu Ser Asp Ile			
215	220	225	
aat gcc ata tgt ttc ttt ccc aat ggc aat gcc ttt gcc act ggc tca			774
Asn Ala Ile Cys Phe Phe Pro Asn Gly Asn Ala Phe Ala Thr Gly Ser			
230	235	240	245
gac gat gcc aca tgc agg ctg ttt gac ctc cgt gca gac cag gag ctc			822
Asp Asp Ala Thr Cys Arg Leu Phe Asp Leu Arg Ala Asp Gln Glu Leu			
250	255	260	
atg acc tac tcc cat gac aac att atc tgt ggt atc aca tct gtt tcc			870

Met Thr Tyr Ser His Asp Asn Ile Ile Cys Gly Ile Thr Ser Val Ser
 265 270 275
 ttc tcc aag agt ggc cgc ctc ctc ctt gct ggg tat gat gac ttc aac 918
 Phe Ser Lys Ser Gly Arg Leu Leu Leu Ala Gly Tyr Asp Asp Phe Asn
 280 285 290
 tgt aat gtc tgg gat gca ctc aaa gct gac aga gca ggt gtc tta gct 966
 Cys Asn Val Trp Asp Ala Leu Lys Ala Asp Arg Ala Gly Val Leu Ala
 295 300 305
 gga cac gac aac cga gtc agc tgc ttg ggg gtg act gat gat ggc atg 1014
 Gly His Asp Asn Arg Val Ser Cys Leu Gly Val Thr Asp Asp Gly Met
 310 315 320 325
 gct gtg gca aca ggg tcc tgg gac agc ttc ctc aag atc tgg aac taa 1062
 Ala Val Ala Thr Gly Ser Trp Asp Ser Phe Leu Lys Ile Trp Asn
 330 335 340
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<210> 506

<211> 340

<212> PRT

<213> Mus musculus

<400> 506

Met Ser Glu Leu Asp Gln Leu Arg Gln Glu Ala Glu Gln Leu Lys Asn

1

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10

15

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 Ile Thr Asn Asn Ile Asp Pro Val Gly Arg Ile Gln Met Arg Thr Arg
 35 40 45
 Arg Thr Leu Arg Gly His Leu Ala Lys Ile Tyr Ala Met His Trp Gly
 50 55 60
 Thr Asp Ser Arg Leu Leu Val Ser Ala Ser Gln Asp Gly Lys Leu Ile
 65 70 75 80
 Ile Trp Asp Ser Tyr Thr Thr Asn Lys Val His Ala Ile Pro Leu Arg
 85 90 95
 Ser Ser Trp Val Met Thr Cys Ala Tyr Ala Pro Ser Gly Asn Tyr Val
 100 105 110
 Ala Cys Gly Gly Leu Asp Asn Ile Cys Ser Ile Tyr Asn Leu Lys Thr
 115 120 125
 Arg Glu Gly Asn Val Arg Val Ser Arg Glu Leu Ala Gly His Thr Gly
 130 135 140
 Tyr Leu Ser Cys Cys Arg Phe Leu Asp Asp Asn Gln Ile Val Thr Ser
 145 150 155 160
 Ser Gly Asp Thr Thr Cys Ala Leu Trp Asp Ile Glu Thr Gly Gln Gln
 165 170 175
 Thr Thr Thr Phe Thr Gly His Thr Gly Asp Val Met Ser Leu Ser Leu
 180 185 190
 Ala Pro Asp Thr Arg Leu Phe Val Ser Gly Ala Cys Asp Ala Ser Ala
 195 200 205
 Lys Leu Trp Asp Val Arg Glu Gly Met Cys Arg Gln Thr Phe Thr Gly
 210 215 220
 His Glu Ser Asp Ile Asn Ala Ile Cys Phe Phe Pro Asn Gly Asn Ala
 225 230 235 240
 Phe Ala Thr Gly Ser Asp Asp Ala Thr Cys Arg Leu Phe Asp Leu Arg

245 250 255
 Ala Asp Gln Glu Leu Met Thr Tyr Ser His Asp Asn Ile Ile Cys Gly
 260 265 270
 Ile Thr Ser Val Ser Phe Ser Lys Ser Gly Arg Leu Leu Leu Ala Gly
 275 280 285
 Tyr Asp Asp Phe Asn Cys Asn Val Trp Asp Ala Leu Lys Ala Asp Arg
 290 295 300
 Ala Gly Val Leu Ala Gly His Asp Asn Arg Val Ser Cys Leu Gly Val
 305 310 315 320
 Thr Asp Asp Gly Met Ala Val Ala Thr Gly Ser Trp Asp Ser Phe Leu
 325 330 335
 Lys Ile Trp Asn
 340

<210> 507

<211> 1503

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (9).. (1331)

<400> 507

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Met Gly Gln Ser Gln Ser Gly Gly His Gly Pro Gly Gly Gly

1

5

10

aag aag gat gac aag gac aag aaa aag aaa tac gaa cct cct gtc cca 98

Lys Lys Asp Asp Lys Asp Lys Lys Lys Lys Tyr Glu Pro Pro Val Pro

15	20	25	30	
act aga gtg ggg aaa aag aag aag aaa aca aag gga cca gat gct gcc	146			
Thr Arg Val Gly Lys Lys Lys Lys Lys Thr Lys Gly Pro Asp Ala Ala				
35	40	45		
agc aaa ctg cca ctg gta aca cct cac acc cag tgc cgc ctg aaa tta	194			
Ser Lys Leu Pro Leu Val Thr Pro His Thr Gln Cys Arg Leu Lys Leu				
50	55	60		
ctg aag cta gag aga ata aaa gac tat ctt ctc atg gag gag gaa ttc	242			
Leu Lys Leu Glu Arg Ile Lys Asp Tyr Leu Leu Met Glu Glu Glu Phe				
65	70	75		
att aga aac cag gaa cag atg aaa cca tta gaa gaa aag caa gag gag	290			
Ile Arg Asn Gln Glu Gln Met Lys Pro Leu Glu Glu Lys Gln Glu Glu				
80	85	90		
gaa aga tca aaa gtg gat gat ctc agg ggg acc ccc atg tct gta gga	338			
Glu Arg Ser Lys Val Asp Asp Leu Arg Gly Thr Pro Met Ser Val Gly				
95	100	105	110	
acc ttg gaa gag atc att gat gat aat cac gcc att gtg tcc aca tct	386			
Thr Leu Glu Glu Ile Ile Asp Asp Asn His Ala Ile Val Ser Thr Ser				
115	120	125		
gtg ggc tca gaa cac tac gtc agc atc ctg tgc ttt gta gac aag gat	434			
Val Gly Ser Glu His Tyr Val Ser Ile Leu Ser Phe Val Asp Lys Asp				
130	135	140		
ctg ctg gaa cca ggc tgc tcc gtc ctg ctc aac cac aag gtg cat gct	482			
Leu Leu Glu Pro Gly Cys Ser Val Leu Leu Asn His Lys Val His Ala				
145	150	155		
gtg ata ggg gtg cta atg gat gac acg gat ccc ctg gtc aca gtg atg	530			
Val Ile Gly Val Leu Met Asp Asp Thr Asp Pro Leu Val Thr Val Met				
160	165	170		
aag gtg gaa aag gcc ccc cag gag acc tac gca gat att ggg gga ctg	578			

Lys Val Glu Lys Ala Pro Gln Glu Thr Tyr Ala Asp Ile Gly Gly Leu
 175 180 185 190
 gac aac cag atc caa gaa att aag gag tct gtg gag ctc ccg ctt acc 626
 Asp Asn Gln Ile Gln Glu Ile Lys Glu Ser Val Glu Leu Pro Leu Thr
 195 200 205
 cat cct gag tat tac gag gag atg ggg ata aag ccc cct aag ggg gtc 674
 His Pro Glu Tyr Tyr Glu Glu Met Gly Ile Lys Pro Pro Lys Gly Val
 210 215 220
 att ctc tac ggt ccg cca gga aca ggt aaa act cta ttg gcc aaa gca 722
 Ile Leu Tyr Gly Pro Pro Gly Thr Gly Lys Thr Leu Leu Ala Lys Ala
 225 230 235
 gta gcg aac cag act tca gcc act ttc ttg cga gtg gtt ggc tca gag 770
 Val Ala Asn Gln Thr Ser Ala Thr Phe Leu Arg Val Val Gly Ser Glu
 240 245 250
 ctt atc cag aag tac cta ggt gac ggg ccc aaa ctt gtc cgg gag ctc 818
 Leu Ile Gln Lys Tyr Leu Gly Asp Gly Pro Lys Leu Val Arg Glu Leu
 255 260 265 270
 ttc cgg gtc gct gag gag cat gca ccg tcc atc gtg ttc att gat gag 866
 Phe Arg Val Ala Glu Glu His Ala Pro Ser Ile Val Phe Ile Asp Glu
 275 280 285
 atc gac gcc att ggg acc aaa aga tat gat tca aat tct gga ggt gag 914
 Ile Asp Ala Ile Gly Thr Lys Arg Tyr Asp Ser Asn Ser Gly Gly Glu
 290 295 300
 aga gaa att cag cga aca atg ttg gaa ctg ttg aac cag ttg gat gga 962
 Arg Glu Ile Gln Arg Thr Met Leu Glu Leu Leu Asn Gln Leu Asp Gly
 305 310 315
 ttt gat tcg agg gga gat gta aaa gtt atc atg gcc aca aac cga ata 1010
 Phe Asp Ser Arg Gly Asp Val Lys Val Ile Met Ala Thr Asn Arg Ile
 320 325 330

gaa act ttg gat cca gca ctt atc agg cca ggc cgc att gac aga aag 1058
 Glu Thr Leu Asp Pro Ala Leu Ile Arg Pro Gly Arg Ile Asp Arg Lys
 335 340 345 350
 atc gag ttc ccc ctg ccg gat gag aag acc aag aag cgt atc ttc cag 1106
 Ile Glu Phe Pro Leu Pro Asp Glu Lys Thr Lys Lys Arg Ile Phe Gln
 355 360 365
 att cac acc agc agg atg aca ctg gct gat gat gta acc ttg gat gac 1154
 Ile His Thr Ser Arg Met Thr Leu Ala Asp Asp Val Thr Leu Asp Asp
 370 375 380
 ttg atc atg gca aag gat gac ctc tct ggg gcc gac atc aag gca atc 1202
 Leu Ile Met Ala Lys Asp Asp Leu Ser Gly Ala Asp Ile Lys Ala Ile
 385 390 395
 tgt aca gaa gct ggc ttg atg gcc ttg cgg gaa cgc aga atg aaa gta 1250
 Cys Thr Glu Ala Gly Leu Met Ala Leu Arg Glu Arg Arg Met Lys Val
 400 405 410
 aca aat gaa gac ttc aaa aaa tct aaa gag aat gtt ctt tat aaa aaa 1298
 Thr Asn Glu Asp Phe Lys Lys Ser Lys Glu Asn Val Leu Tyr Lys Lys
 415 420 425 430
 caa gaa ggc acc cct gag ggg ctc tat ctc tag tggccacag tcgtcctcag 1351
 Gln Glu Gly Thr Pro Glu Gly Leu Tyr Leu
 435 440
 ggatggggag ctgtccccag gaaccattc tccagttcat ttttgccagt agaaagcctg 1411
 tatcgtggag gacactgtgc ctccatatgt tgttggatcat tgtgccgtgc tgctctctac 1471
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<210> 508

<211> 440

<212> PRT

<213> Mus musculus

<400> 508

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 20 25 30
 Val Gly Lys Lys Lys Lys Lys Thr Lys Gly Pro Asp Ala Ala Ser Lys
 35 40 45
 Leu Pro Leu Val Thr Pro His Thr Gln Cys Arg Leu Lys Leu Leu Lys
 50 55 60
 Leu Glu Arg Ile Lys Asp Tyr Leu Leu Met Glu Glu Glu Phe Ile Arg
 65 70 75 80
 Asn Gln Glu Gln Met Lys Pro Leu Glu Glu Lys Gln Glu Glu Glu Arg
 85 90 95
 Ser Lys Val Asp Asp Leu Arg Gly Thr Pro Met Ser Val Gly Thr Leu
 100 105 110
 Glu Glu Ile Ile Asp Asp Asn His Ala Ile Val Ser Thr Ser Val Gly
 115 120 125
 Ser Glu His Tyr Val Ser Ile Leu Ser Phe Val Asp Lys Asp Leu Leu
 130 135 140
 Glu Pro Gly Cys Ser Val Leu Leu Asn His Lys Val His Ala Val Ile
 145 150 155 160
 Gly Val Leu Met Asp Asp Thr Asp Pro Leu Val Thr Val Met Lys Val
 165 170 175
 Glu Lys Ala Pro Gln Glu Thr Tyr Ala Asp Ile Gly Gly Leu Asp Asn
 180 185 190
 Gln Ile Gln Glu Ile Lys Glu Ser Val Glu Leu Pro Leu Thr His Pro
 195 200 205
 Glu Tyr Tyr Glu Glu Met Gly Ile Lys Pro Pro Lys Gly Val Ile Leu

210	215	220	
Tyr Gly Pro Pro Gly Thr Gly Lys Thr Leu Leu Ala Lys Ala Val Ala			
225	230	235	240
Asn Gln Thr Ser Ala Thr Phe Leu Arg Val Val Gly Ser Glu Leu Ile			
	245	250	255
Gln Lys Tyr Leu Gly Asp Gly Pro Lys Leu Val Arg Glu Leu Phe Arg			
	260	265	270
Val Ala Glu Glu His Ala Pro Ser Ile Val Phe Ile Asp Glu Ile Asp			
	275	280	285
Ala Ile Gly Thr Lys Arg Tyr Asp Ser Asn Ser Gly Gly Glu Arg Glu			
	290	295	300
Ile Gln Arg Thr Met Leu Glu Leu Leu Asn Gln Leu Asp Gly Phe Asp			
305	310	315	320
Ser Arg Gly Asp Val Lys Val Ile Met Ala Thr Asn Arg Ile Glu Thr			
	325	330	335
Leu Asp Pro Ala Leu Ile Arg Pro Gly Arg Ile Asp Arg Lys Ile Glu			
	340	345	350
Phe Pro Leu Pro Asp Glu Lys Thr Lys Lys Arg Ile Phe Gln Ile His			
	355	360	365
Thr Ser Arg Met Thr Leu Ala Asp Asp Val Thr Leu Asp Asp Leu Ile			
	370	375	380
Met Ala Lys Asp Asp Leu Ser Gly Ala Asp Ile Lys Ala Ile Cys Thr			
385	390	395	400
Glu Ala Gly Leu Met Ala Leu Arg Glu Arg Arg Met Lys Val Thr Asn			
	405	410	415
Glu Asp Phe Lys Lys Ser Lys Glu Asn Val Leu Tyr Lys Lys Gln Glu			
	420	425	430
Gly Thr Pro Glu Gly Leu Tyr Leu			
	435	440	

<210> 509

<211> 1381

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (176).. (730)

<400> 509

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 cttcaagtgc ttgacaacgc acccctttat cagggtatca gagcatcgcc acaga atg 178

Met

1

aag ctg gtt tcc atc acc ctg atg tta ttg ggt tca ctc gct ttc cta 226
 Lys Leu Val Ser Ile Thr Leu Met Leu Leu Gly Ser Leu Ala Phe Leu

5

10

15

ggc gcg gac act gca ggg cca gat act cct tcg cag ttc cga aag aag 274
 Gly Ala Asp Thr Ala Gly Pro Asp Thr Pro Ser Gln Phe Arg Lys Lys

20

25

30

tgg aat aag tgg gcg cta agt cgt ggg aag agg gaa cta caa gca tcc 322
 Trp Asn Lys Trp Ala Leu Ser Arg Gly Lys Arg Glu Leu Gln Ala Ser

35

40

45

agc agc tac cct acg gga ctc gct gat gag acg aca gtt cct acc cag 370
 Ser Ser Tyr Pro Thr Gly Leu Ala Asp Glu Thr Thr Val Pro Thr Gln

50

55

60

65

act ctt gat cca ttc ctg gac gag cag aac aca act ggc ccc cta caa 418

Thr Leu Asp Pro Phe Leu Asp Glu Gln Asn Thr Thr Gly Pro Leu Gln
 70 75 80
 gcc agc aat cag agc gaa gcc cac att cgt gtc aaa cgc tac cgc cag 466
 Ala Ser Asn Gln Ser Glu Ala His Ile Arg Val Lys Arg Tyr Arg Gln
 85 90 95
 agc atg aac cag ggt tcc cgc agc aat gga tgc cgc ttc ggg acc tgc 514
 Ser Met Asn Gln Gly Ser Arg Ser Asn Gly Cys Arg Phe Gly Thr Cys
 100 105 110
 aca ttt cag aaa ttg gcc cac cag atc tac cag cta aca gac aaa gac 562
 Thr Phe Gln Lys Leu Ala His Gln Ile Tyr Gln Leu Thr Asp Lys Asp
 115 120 125
 aag gac ggc atg gct ccc aga aac aag atc agc cct caa ggc tat ggc 610
 Lys Asp Gly Met Ala Pro Arg Asn Lys Ile Ser Pro Gln Gly Tyr Gly
 130 135 140 145
 cgc cgg cgc cgg cgt tcc ctg ctg gag gtc ctc cgg tcc cgg act gtg 658
 Arg Arg Arg Arg Arg Ser Leu Leu Glu Val Leu Arg Ser Arg Thr Val
 150 155 160
 gag tcc tcc cag gag cag aca cac aca gcc cca ggc ccc tgg gcg cac 706
 Glu Ser Ser Gln Glu Gln Thr His Thr Ala Pro Gly Pro Trp Ala His
 165 170 175
 atc tcc aga ctc ttt agg ata tag gtgcgggtga cagcattgaa cagtcgggag 760
 Ile Ser Arg Leu Phe Arg Ile
 180 185
 agtatcccgt tggcgccctgc ggaatcagag aacttcgcac cggggcggac tgagacaatc 820
 ctgcagagat ctgcctggct gccctaggg gaggcagagg aaccaagac caagccaggc 880
 tcatgccaga aaccgagact tacaggctga tactctccgg gcaggggtct gagccactgc 940
 ctgtcccgt cataaactgg tttctcacgg ggcataagcc tcattactac ttgaactttc 1000
 caaaacctag cgaggaacgt gcaatgcttg ttgtccagcc aaaggtaact atagtattta 1060
 agtttgttgc tgtcaagggt tttttttttg taacttcaaa tatatagaga tatttttgta 1120

cgttatatat tgtattaagg gcattttaaa gtgattatat tgcaccttc ccctatttta 1180
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 tgtgtgtgtg tgtgtgtgtg taaggaggag agcgccctgat tatcgccctgt ggatgaagaa 1300
 aaaacattgt gtttcctata atctatttac ataaaaataig tgatctggga aaaagcaaac 1360
 caataaactg tctcaatgct g 1381

<210> 510

<211> 184

<212> PRT

<213> Mus musculus

<400> 510

Met	Lys	Leu	Val	Ser	Ile	Thr	Leu	Met	Leu	Leu	Gly	Ser	Leu	Ala	Phe
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Leu	Gly	Ala	Asp	Thr	Ala	Gly	Pro	Asp	Thr	Pro	Ser	Gln	Phe	Arg	Lys
				20				25						30	
Lys	Trp	Asn	Lys	Trp	Ala	Leu	Ser	Arg	Gly	Lys	Arg	Glu	Leu	Gln	Ala
			35					40						45	
Ser	Ser	Ser	Tyr	Pro	Thr	Gly	Leu	Ala	Asp	Glu	Thr	Thr	Val	Pro	Thr
			50					55						60	
Gln	Thr	Leu	Asp	Pro	Phe	Leu	Asp	Glu	Gln	Asn	Thr	Thr	Gly	Pro	Leu
			65					70						75	
Gln	Ala	Ser	Asn	Gln	Ser	Glu	Ala	His	Ile	Arg	Val	Lys	Arg	Tyr	Arg
				85						90				95	
Gln	Ser	Met	Asn	Gln	Gly	Ser	Arg	Ser	Asn	Gly	Cys	Arg	Phe	Gly	Thr
				100						105				110	
Cys	Thr	Phe	Gln	Lys	Leu	Ala	His	Gln	Ile	Tyr	Gln	Leu	Thr	Asp	Lys
				115						120				125	
Asp	Lys	Asp	Gly	Met	Ala	Pro	Arg	Asn	Lys	Ile	Ser	Pro	Gln	Gly	Tyr

130 135 140
 Gly Arg Arg Arg Arg Arg Ser Leu Leu Glu Val Leu Arg Ser Arg Thr
 145 150 155 160
 Val Glu Ser Ser Gln Glu Gln Thr His Thr Ala Pro Gly Pro Trp Ala
 165 170 175
 His Ile Ser Arg Leu Phe Arg Ile
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<210> 511

<211> 1629

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (86).. (1615)

<400> 511

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 Met Ala Asp Arg Ala Ala Leu Glu Glu
 1 5
 ctg gta cga ctc cag gga gcg cat gtg agg ggc ctt aag gag cag aaa 160
 Leu Val Arg Leu Gln Gly Ala His Val Arg Gly Leu Lys Glu Gln Lys
 10 15 20 25
 gcg tcc gct gag cag atc gag gag gag gtg acg aaa ctc cta aaa ctg 208
 Ala Ser Ala Glu Gln Ile Glu Glu Glu Val Thr Lys Leu Leu Lys Leu
 30 35 40
 aag gca cag ctg ggc cag gat gaa ggc aaa cag aag ttt gtg ctc aaa 256

Lys Ala Gln Leu Gly Gln Asp Glu Gly Lys Gln Lys Phe Val Leu Lys
 45 50 55
 acc ccc aag ggc acg aga gac tat agt ccc cgg cag atg gcg gtc cgg 304
 Thr Pro Lys Gly Thr Arg Asp Tyr Ser Pro Arg Gln Met Ala Val Arg
 60 65 70
 gaa aag gtg ttt gat gtc atc atc cgc tgt ttc aaa cgc cat gga gca 352
 Glu Lys Val Phe Asp Val Ile Ile Arg Cys Phe Lys Arg His Gly Ala
 75 80 85
 gaa gtg att gat aca cct gtg ttt gaa cta aag gaa aca ctg act gga 400
 Glu Val Ile Asp Thr Pro Val Phe Glu Leu Lys Glu Thr Leu Thr Gly
 90 95 100 105
 aag tac gga gaa gac tca aag ctt atc tat gac ttg aag gac cag ggt 448
 Lys Tyr Gly Glu Asp Ser Lys Leu Ile Tyr Asp Leu Lys Asp Gln Gly
 110 115 120
 ggg gag ctg ctg tcc ctc cgt tat gac ctt act gtc cct ttt gct cgc 496
 Gly Glu Leu Leu Ser Leu Arg Tyr Asp Leu Thr Val Pro Phe Ala Arg
 125 130 135
 tat ctg gca atg aat aaa ctg acc aac att aaa cgc tac cat ata gca 544
 Tyr Leu Ala Met Asn Lys Leu Thr Asn Ile Lys Arg Tyr His Ile Ala
 140 145 150
 aag gtg tat cgc cgg gac aac cca gct atg acc cga ggc cgt tac cgt 592
 Lys Val Tyr Arg Arg Asp Asn Pro Ala Met Thr Arg Gly Arg Tyr Arg
 155 160 165
 gaa ttc tat caa tgc gat ttt gac att gcc gga cag ttc gac ccc atg 640
 Glu Phe Tyr Gln Cys Asp Phe Asp Ile Ala Gly Gln Phe Asp Pro Met
 170 175 180 185
 att cct gat gca gag tgc cta aag att atg tgc gag atc ctg agt tca 688
 Ile Pro Asp Ala Glu Cys Leu Lys Ile Met Cys Glu Ile Leu Ser Ser
 190 195 200

ctt cag atc ggc aac ttc ctg gtc aag gta aac gac agg cgc atc cta 736
 Leu Gln Ile Gly Asn Phe Leu Val Lys Val Asn Asp Arg Arg Ile Leu
 205 210 215
 gat ggg atg ttt gct gtc tgt ggt gtt cct gat agc aag ttc cgt acc 784
 Asp Gly Met Phe Ala Val Cys Gly Val Pro Asp Ser Lys Phe Arg Thr
 220 225 230
 atc tgc tcc tcg gtg gac aag cta gac aag gtt tcc tgg gag gaa gtg 832
 Ile Cys Ser Ser Val Asp Lys Leu Asp Lys Val Ser Trp Glu Glu Val
 235 240 245
 aag aat gag atg gtg gga gag aag ggc ctt gca ccg gaa gtg gct gat 880
 Lys Asn Glu Met Val Gly Glu Lys Gly Leu Ala Pro Glu Val Ala Asp
 250 255 260 265
 cgc atc ggg gac tat gtc cag cag cat ggt ggg gtt tct ctg gtg gag 928
 Arg Ile Gly Asp Tyr Val Gln Gln His Gly Gly Val Ser Leu Val Glu
 270 275 280
 cag tta ctg cag gat cct aaa ctc tcc caa aac aaa cag gct gta gag 976
 Gln Leu Leu Gln Asp Pro Lys Leu Ser Gln Asn Lys Gln Ala Val Glu
 285 290 295
 ggc ttg gga gac cta aag ctg ctc ttt gag tat cta atc ctg ttt ggc 1024
 Gly Leu Gly Asp Leu Lys Leu Leu Phe Glu Tyr Leu Ile Leu Phe Gly
 300 305 310
 att gat gac aag atc tcc ttt gac ctg agc ctt gct cgg ggg cta gac 1072
 Ile Asp Asp Lys Ile Ser Phe Asp Leu Ser Leu Ala Arg Gly Leu Asp
 315 320 325
 tac tat act ggg gtc atc tat gag gca gtg ctg cta cag atg cca acc 1120
 Tyr Tyr Thr Gly Val Ile Tyr Glu Ala Val Leu Leu Gln Met Pro Thr
 330 335 340 345
 caa gct ggg gaa gag ccc ctg ggt gtg ggc agc ata gct gct gga ggg 1168
 Gln Ala Gly Glu Glu Pro Leu Gly Val Gly Ser Ile Ala Ala Gly Gly

350	355	360	
cgc tac gat ggc ctg gtt ggc atg ttt gac ccc aag ggg cgc aag gtg	1216		
Arg Tyr Asp Gly Leu Val Gly Met Phe Asp Pro Lys Gly Arg Lys Val			
365	370	375	
cca tgc gtt ggg ctg agt att gga gtg gag cgg atc ttt tcc att gta	1264		
Pro Cys Val Gly Leu Ser Ile Gly Val Glu Arg Ile Phe Ser Ile Val			
380	385	390	
gag caa aga tta gag gct tca gag gaa aag gta cgg acc aca gag acg	1312		
Glu Gln Arg Leu Glu Ala Ser Glu Glu Lys Val Arg Thr Thr Glu Thr			
395	400	405	
cag gtg ctt gtg gca tct gca cag aag aag ctg ctg gag gag aga ctg	1360		
Gln Val Leu Val Ala Ser Ala Gln Lys Lys Leu Leu Glu Glu Arg Leu			
410	415	420	425
aag ctt gtc tca gag tta tgg gat gct ggg atc aag gct gag ctg ctg	1408		
Lys Leu Val Ser Glu Leu Trp Asp Ala Gly Ile Lys Ala Glu Leu Leu			
430	435	440	
tac aag aag aac ccg aag tta cta aac cag ttg cag tac tgt gag gag	1456		
Tyr Lys Lys Asn Pro Lys Leu Leu Asn Gln Leu Gln Tyr Cys Glu Glu			
445	450	455	
gca ggc atc cca ctg gtg gcc atc att ggt gag cag gaa ctg aag gat	1504		
Ala Gly Ile Pro Leu Val Ala Ile Ile Gly Glu Gln Glu Leu Lys Asp			
460	465	470	
ggc gtc atc aag ctg cgc tcg gtg gcc agc aga gag gag gtg gat gtc	1552		
Gly Val Ile Lys Leu Arg Ser Val Ala Ser Arg Glu Glu Val Asp Val			
475	480	485	
caa aga gaa gac ctt gtg gag gaa atc aga aga aga aca aat cag ccc	1600		
Gln Arg Glu Asp Leu Val Glu Glu Ile Arg Arg Arg Thr Asn Gln Pro			
490	495	500	505
ctc tcc atc tgc tga actgaacaaa ctat	1629		

Leu Ser Ile Cys

510

<210> 512

<211> 509

<212> PRT

<213> Mus musculus

<400> 512

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His	Val	Arg	Gly	Leu	Lys	Glu	Gln	Lys	Ala	Ser	Ala	Glu	Gln	Ile	Glu
			20					25					30		
Glu	Glu	Val	Thr	Lys	Leu	Leu	Lys	Leu	Lys	Ala	Gln	Leu	Gly	Gln	Asp
		35				40					45				
Glu	Gly	Lys	Gln	Lys	Phe	Val	Leu	Lys	Thr	Pro	Lys	Gly	Thr	Arg	Asp
	50				55					60					
Tyr	Ser	Pro	Arg	Gln	Met	Ala	Val	Arg	Glu	Lys	Val	Phe	Asp	Val	Ile
	65				70				75					80	
Ile	Arg	Cys	Phe	Lys	Arg	His	Gly	Ala	Glu	Val	Ile	Asp	Thr	Pro	Val
			85					90					95		
Phe	Glu	Leu	Lys	Glu	Thr	Leu	Thr	Gly	Lys	Tyr	Gly	Glu	Asp	Ser	Lys
		100						105					110		
Leu	Ile	Tyr	Asp	Leu	Lys	Asp	Gln	Gly	Gly	Glu	Leu	Leu	Ser	Leu	Arg
		115					120					125			
Tyr	Asp	Leu	Thr	Val	Pro	Phe	Ala	Arg	Tyr	Leu	Ala	Met	Asn	Lys	Leu
	130					135					140				
Thr	Asn	Ile	Lys	Arg	Tyr	His	Ile	Ala	Lys	Val	Tyr	Arg	Arg	Asp	Asn
145					150					155				160	

Pro Ala Met Thr Arg Gly Arg Tyr Arg Glu Phe Tyr Gln Cys Asp Phe
 165 170 175
 Asp Ile Ala Gly Gln Phe Asp Pro Met Ile Pro Asp Ala Glu Cys Leu
 180 185 190
 Lys Ile Met Cys Glu Ile Leu Ser Ser Leu Gln Ile Gly Asn Phe Leu
 195 200 205
 Val Lys Val Asn Asp Arg Arg Ile Leu Asp Gly Met Phe Ala Val Cys
 210 215 220
 Gly Val Pro Asp Ser Lys Phe Arg Thr Ile Cys Ser Ser Val Asp Lys
 225 230 235 240
 Leu Asp Lys Val Ser Trp Glu Glu Val Lys Asn Glu Met Val Gly Glu
 245 250 255
 Lys Gly Leu Ala Pro Glu Val Ala Asp Arg Ile Gly Asp Tyr Val Gln
 260 265 270
 Gln His Gly Gly Val Ser Leu Val Glu Gln Leu Leu Gln Asp Pro Lys
 275 280 285
 Leu Ser Gln Asn Lys Gln Ala Val Glu Gly Leu Gly Asp Leu Lys Leu
 290 295 300
 Leu Phe Glu Tyr Leu Ile Leu Phe Gly Ile Asp Asp Lys Ile Ser Phe
 305 310 315 320
 Asp Leu Ser Leu Ala Arg Gly Leu Asp Tyr Tyr Thr Gly Val Ile Tyr
 325 330 335
 Glu Ala Val Leu Leu Gln Met Pro Thr Gln Ala Gly Glu Glu Pro Leu
 340 345 350
 Gly Val Gly Ser Ile Ala Ala Gly Gly Arg Tyr Asp Gly Leu Val Gly
 355 360 365
 Met Phe Asp Pro Lys Gly Arg Lys Val Pro Cys Val Gly Leu Ser Ile
 370 375 380
 Gly Val Glu Arg Ile Phe Ser Ile Val Glu Gln Arg Leu Glu Ala Ser

385 390 395 400
 Glu Glu Lys Val Arg Thr Thr Glu Thr Gln Val Leu Val Ala Ser Ala
 405 410 415
 Gln Lys Lys Leu Leu Glu Glu Arg Leu Lys Leu Val Ser Glu Leu Trp
 420 425 430
 Asp Ala Gly Ile Lys Ala Glu Leu Leu Tyr Lys Lys Asn Pro Lys Leu
 435 440 445
 Leu Asn Gln Leu Gln Tyr Cys Glu Glu Ala Gly Ile Pro Leu Val Ala
 450 455 460
 Ile Ile Gly Glu Gln Glu Leu Lys Asp Gly Val Ile Lys Leu Arg Ser
 465 470 475 480
 Val Ala Ser Arg Glu Glu Val Asp Val Gln Arg Glu Asp Leu Val Glu
 485 490 495
 Glu Ile Arg Arg Arg Thr Asn Gln Pro Leu Ser Ile Cys
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<210> 513

<211> 1360

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (91).. (945)

<400> 513

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 Met Ser Asp Lys Arg Gln Ser Ser

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His Val Gln Ser Gln Arg Ile Pro Glu Ser Phe Arg Glu Asn Ser Lys			
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aca gaa ctg gga gct tgt gga tgg att ttg gtg gct gtc tgc ttc atc	210		
Thr Glu Leu Gly Ala Cys Gly Trp Ile Leu Val Ala Val Ser Phe Ile			
25	30	35	40
ttc gtg ctt ata act ttc cca ata tca att tgg att tgc ata aag att	258		
Phe Val Leu Ile Thr Phe Pro Ile Ser Ile Trp Ile Cys Ile Lys Ile			
45	50	55	
gtg aag gag tat gaa aga gtg atc atc ttc aga ctg ggc cgc att ttg	306		
Val Lys Glu Tyr Glu Arg Val Ile Ile Phe Arg Leu Gly Arg Ile Leu			
60	65	70	
caa ggt ggc gcc aaa gga cct ggg ttg ttt ttc atc ctg ccg tgc act	354		
Gln Gly Gly Ala Lys Gly Pro Gly Leu Phe Phe Ile Leu Pro Cys Thr			
75	80	85	
gac agc ttc atc aag gtg gac atg agg acc atc tcc ttc gat att ccc	402		
Asp Ser Phe Ile Lys Val Asp Met Arg Thr Ile Ser Phe Asp Ile Pro			
90	95	100	
cca cag gag gtg ctc act aag gac tgc gtg acc atc agc gtg gat ggt	450		
Pro Gln Glu Val Leu Thr Lys Asp Ser Val Thr Ile Ser Val Asp Gly			
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gtg gtc tat tac cgt gtt cag aac gca acc ctg gct gtg gca aat atc	498		
Val Val Tyr Tyr Arg Val Gln Asn Ala Thr Leu Ala Val Ala Asn Ile			
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acc aat gca gat tgc gca acc cgt ctt ttg gcg caa act acc ctc agg	546		
Thr Asn Ala Asp Ser Ala Thr Arg Leu Leu Ala Gln Thr Thr Leu Arg			
140	145	150	
aat gcg ctg ggc acc aag aac ctg tct cag atc ctc tct gac aga gaa	594		

Asn Ala Leu Gly Thr Lys Asn Leu Ser Gln Ile Leu Ser Asp Arg Glu
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 gag atc gca cac cac atg cag agt acg ctg gat gac gcc aca gat gac 642
 Glu Ile Ala His His Met Gln Ser Thr Leu Asp Asp Ala Thr Asp Asp
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 Trp Gly Ile Lys Val Glu Arg Val Glu Ile Lys Asp Val Lys Leu Pro
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 gta cag ctc cag aga gcc atg gct gca gag gca gaa gcc gcc cgg gag 738
 Val Gln Leu Gln Arg Ala Met Ala Ala Glu Ala Glu Ala Ala Arg Glu
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 gct aga gcc aag gtg att gca gcc gaa ggg gaa atg aat gca tcc agg 786
 Ala Arg Ala Lys Val Ile Ala Ala Glu Gly Glu Met Asn Ala Ser Arg
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 Ala Leu Lys Glu Ala Ser Met Val Ile Thr Glu Ser Pro Ala Ala Leu
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 cag ctc cgg tac ctt caa acc ctg acc act atc gct gcg gag aaa aac 882
 Gln Leu Arg Tyr Leu Gln Thr Leu Thr Thr Ile Ala Ala Glu Lys Asn
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 tcc acc att gtc ttc cct ctg ccc atc gac atg ttg cag ggc atc atg 930
 Ser Thr Ile Val Phe Pro Leu Pro Ile Asp Met Leu Gln Gly Ile Met
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 Gly Ser His His
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<211> 284

<212> PRT

<213> Mus musculus

<400> 514

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 35 40 45
 Ser Ile Trp Ile Cys Ile Lys Ile Val Lys Glu Tyr Glu Arg Val Ile
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 Ile Phe Arg Leu Gly Arg Ile Leu Gln Gly Gly Ala Lys Gly Pro Gly
 65 70 75 80
 Leu Phe Phe Ile Leu Pro Cys Thr Asp Ser Phe Ile Lys Val Asp Met
 85 90 95
 Arg Thr Ile Ser Phe Asp Ile Pro Pro Gln Glu Val Leu Thr Lys Asp
 100 105 110
 Ser Val Thr Ile Ser Val Asp Gly Val Val Tyr Tyr Arg Val Gln Asn
 115 120 125
 Ala Thr Leu Ala Val Ala Asn Ile Thr Asn Ala Asp Ser Ala Thr Arg
 130 135 140

Leu Leu Ala Gln Thr Thr Leu Arg Asn Ala Leu Gly Thr Lys Asn Leu
 145 150 155 160
 Ser Gln Ile Leu Ser Asp Arg Glu Glu Ile Ala His His Met Gln Ser
 165 170 175
 Thr Leu Asp Asp Ala Thr Asp Asp Trp Gly Ile Lys Val Glu Arg Val
 180 185 190
 Glu Ile Lys Asp Val Lys Leu Pro Val Gln Leu Gln Arg Ala Met Ala
 195 200 205
 Ala Glu Ala Glu Ala Ala Arg Glu Ala Arg Ala Lys Val Ile Ala Ala
 210 215 220
 Glu Gly Glu Met Asn Ala Ser Arg Ala Leu Lys Glu Ala Ser Met Val
 225 230 235 240
 Ile Thr Glu Ser Pro Ala Ala Leu Gln Leu Arg Tyr Leu Gln Thr Leu
 245 250 255
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<213> Mus musculus

<220>

<221> CDS

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<400> 515

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acagtgagaa gcatgctttc cactgctctc cctgggccca gttgccaccc agg atg 176
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Ser Val Ser Glu Ser Ala Val Phe Ala Tyr Glu Ser Ser Val His Ser
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Thr Asn Val Leu Leu Ser Leu Asn Asp Gln Arg Lys Lys Asp Val Leu
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tgt gat gtg act gtc ctg gtg gag ggc cag cgg ttc cga gcc cac cgc 320
Cys Asp Val Thr Val Leu Val Glu Gly Gln Arg Phe Arg Ala His Arg
35 40 45
tcg gtg ctg gct gcg tgc agc agc tac ttc cac tcg aga atc gta ggc 368
Ser Val Leu Ala Ala Cys Ser Ser Tyr Phe His Ser Arg Ile Val Gly
50 55 60 65
cag act gac gca gag ctc acc gtc aca ctg cct gaa gag gta acg gtt 416
Gln Thr Asp Ala Glu Leu Thr Val Thr Leu Pro Glu Glu Val Thr Val
70 75 80
aaa gga ttt gaa cct tta att cag ttt gcc tac act gcc aaa ctc att 464
Lys Gly Phe Glu Pro Leu Ile Gln Phe Ala Tyr Thr Ala Lys Leu Ile
85 90 95
tta agt aaa gac aat gtt gac gaa gtg tgc agg tgt gtg gag ttt cta 512
Leu Ser Lys Asp Asn Val Asp Glu Val Cys Arg Cys Val Glu Phe Leu
100 105 110
agc gta cac aat atc gag gaa tcc tgc ttc cag ttt ctc aag ttt aag 560
Ser Val His Asn Ile Glu Glu Ser Cys Phe Gln Phe Leu Lys Phe Lys
115 120 125

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Phe Leu Asp Ser Thr Ser Glu Gln Gln Glu Cys Ala Arg Lys Lys Cys
130              135              140              145
ttc tcc tca cac tgt cag aaa gca gat ttt aaa ttt tca ttt tca gaa      656
Phe Ser Ser His Cys Gln Lys Ala Asp Phe Lys Phe Ser Phe Ser Glu
150              155              160
cag aaa gat ctc gaa atc gat gaa gca gat gaa ttc ttg gaa aag aaa      704
Gln Lys Asp Leu Glu Ile Asp Glu Ala Asp Glu Phe Leu Glu Lys Lys
165              170              175
cgt gtt cag acg cct cag tgt gac tcc cgc agg tgt cag ggc agt gta      752
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180              185              190
aaa gca tcc ccc cct ctc cag gac agt gtc agt cag gcg tgc cag tcc      800
Lys Ala Ser Pro Pro Leu Gln Asp Ser Val Ser Gln Ala Cys Gln Ser
195              200              205
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Leu Cys Thr Asp Lys Asp Gly Ala Leu Ala Leu Pro Ser Leu Cys Pro
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aaa tac aga aag ttc cag aaa gcg ttt gga act gac aag atc cga act      896
Lys Tyr Arg Lys Phe Gln Lys Ala Phe Gly Thr Asp Lys Ile Arg Thr
230              235              240
cta gaa tcc ggt gtc aga gat gtc cac act gcc tct gtc cag cca aat      944
Leu Glu Ser Gly Val Arg Asp Val His Thr Ala Ser Val Gln Pro Asn
245              250              255
gag acc tct gaa ctt gag tgt ttt ggg gga gcg cag ggc tgt gca gat      992
Glu Thr Ser Glu Leu Glu Cys Phe Gly Gly Ala Gln Gly Cys Ala Asp
260              265              270
tta cac gtg att tta aaa tgt gaa gga atg aag gca gcc atg gag agt      1040
Leu His Val Ile Leu Lys Cys Glu Gly Met Lys Ala Ala Met Glu Ser

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275	280	285	
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Glu Asp Thr Glu Gly Gln Asp Pro Ser Pro Gln Cys Pro Ala Glu Gln			
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ccc caa ggg aca ccc ttg cct cag gat tct gca gga cct cac ggg ctc 1136			
Pro Gln Gly Thr Pro Leu Pro Gln Asp Ser Ala Gly Pro His Gly Leu			
	310	315	320
tac tcc ttg tca gcc tta cac aca tat gag cag tca ggt gac gtg gcc 1184			
Tyr Ser Leu Ser Ala Leu His Thr Tyr Glu Gln Ser Gly Asp Val Ala			
	325	330	335
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Phe Ala Gly Val Gln Ser Lys Thr Val Lys Thr Glu Lys Pro Leu Ser			
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agg cca gat gcc cag gac gag aag cca tcg gaa aat cag gat tta tat 1280			
Arg Pro Asp Ala Gln Asp Glu Lys Pro Ser Glu Asn Gln Asp Leu Tyr			
	355	360	365
ctg aag tct agc atg ggc cct aaa gaa gac agc agc agc ctt gca tct 1328			
Leu Lys Ser Ser Met Gly Pro Lys Glu Asp Ser Ser Ser Leu Ala Ser			
370	375	380	385
gag gat cgg agt agt gtg gag cga gag gtg gca gag cac ctg gcc aaa 1376			
Glu Asp Arg Ser Ser Val Glu Arg Glu Val Ala Glu His Leu Ala Lys			
	390	395	400
ggc ttc tgg agt gac att tgc agc acg gac tcg cct tgc caa atg cag 1424			
Gly Phe Trp Ser Asp Ile Cys Ser Thr Asp Ser Pro Cys Gln Met Gln			
	405	410	415
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Leu Ser Pro Thr Val Ala Lys Asp Gly Pro Glu Gln Gly Tyr Ser Gln			
	420	425	430
agg cga tct gag tgt ccc tgg ttg ggt atc agg atc agt gag agc ccc 1520			

Arg Arg Ser Glu Cys Pro Trp Leu Gly Ile Arg Ile Ser Glu Ser Pro
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 Glu Pro Gly Gln Arg Thr Phe Thr Thr Leu Ser Ser Val Asn Cys Pro
 450 455 460 465
 ttt atc agt act ctg agt tcc gaa ggc tgc tca agc aac ttg gaa att 1616
 Phe Ile Ser Thr Leu Ser Ser Glu Gly Cys Ser Ser Asn Leu Glu Ile
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 Gly Asn Tyr Asp Tyr Val Ser Glu Pro Gln Gln Glu Pro Cys Pro Tyr
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 Ala Cys Val Ile Ser Leu Gly Asp Asp Ser Glu Thr Asp Thr Glu Gly
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 Asp Ser Glu Ser Cys Ser Ala Arg Glu Gln Asp Cys Glu Val Lys Leu
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 cca ttc aat gcc caa cgg ata att tcg ctc tca cga aat gat ttc caa 1808
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 530 535 540 545
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 His Asp Ile Arg Arg Arg Ser Lys Asn Arg Ile Ala Ala Gln Arg Cys
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Ala Lys Tyr Ser Ala Ser Asp Cys Pro Leu Ser Phe Leu Ile Ser Glu
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Lys Gly Lys Ser Thr Pro Asp Gly Glu Leu Ala Phe Thr Ser Val Phe
660 665 670
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Ser Val Ser Asp Val Pro Pro Thr Ala Pro Pro Pro Cys Gly Arg Gly
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Ser Ser Ala Ala Ser Gln Glu Leu Val Gln Glu Ser Pro Pro Thr Thr
690 695 700 705
gca gct gcc cca gag cag gcc acg ctg ttg gaa ccc tgt cgg cag agt 2336
Ala Ala Ala Pro Glu Gln Ala Thr Leu Leu Glu Pro Cys Arg Gln Ser
710 715 720
gct ggg atc tca gac ttc tgt cag cag atg tct gac aag tgc act act 2384
Ala Gly Ile Ser Asp Phe Cys Gln Gln Met Ser Asp Lys Cys Thr Thr
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gac gag taa accccacggg cagccttcag cccatggcct ccctctgacc 2433
Asp Glu

740

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<211> 739

<212> PRT

<213> Mus musculus

<400> 516

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			20					25					30		
Leu	Cys	Asp	Val	Thr	Val	Leu	Val	Glu	Gly	Gln	Arg	Phe	Arg	Ala	His
		35					40					45			
Arg	Ser	Val	Leu	Ala	Ala	Cys	Ser	Ser	Tyr	Phe	His	Ser	Arg	Ile	Val

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Val Lys Gly Phe Glu Pro Leu Ile Gln Phe Ala Tyr Thr Ala Lys Leu		
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Ile Leu Ser Lys Asp Asn Val Asp Glu Val Cys Arg Cys Val Glu Phe		
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Leu Ser Val His Asn Ile Glu Glu Ser Cys Phe Gln Phe Leu Lys Phe		
115	120	125
Lys Phe Leu Asp Ser Thr Ser Glu Gln Gln Glu Cys Ala Arg Lys Lys		
130	135	140
Cys Phe Ser Ser His Cys Gln Lys Ala Asp Phe Lys Phe Ser Phe Ser		
145	150	155
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Glu Gln Lys Asp Leu Glu Ile Asp Glu Ala Asp Glu Phe Leu Glu Lys		
165	170	175
Lys Arg Val Gln Thr Pro Gln Cys Asp Ser Arg Arg Cys Gln Gly Ser		
180	185	190
Val Lys Ala Ser Pro Pro Leu Gln Asp Ser Val Ser Gln Ala Cys Gln		
195	200	205
Ser Leu Cys Thr Asp Lys Asp Gly Ala Leu Ala Leu Pro Ser Leu Cys		
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Pro Lys Tyr Arg Lys Phe Gln Lys Ala Phe Gly Thr Asp Lys Ile Arg		
225	230	235
240		
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Asn Glu Thr Ser Glu Leu Glu Cys Phe Gly Gly Ala Gln Gly Cys Ala		
260	265	270
Asp Leu His Val Ile Leu Lys Cys Glu Gly Met Lys Ala Ala Met Glu		
275	280	285

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 Gln Pro Gln Gly Thr Pro Leu Pro Gln Asp Ser Ala Gly Pro His Gly
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 325 330 335
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 Ser Arg Pro Asp Ala Gln Asp Glu Lys Pro Ser Glu Asn Gln Asp Leu
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 Tyr Leu Lys Ser Ser Met Gly Pro Lys Glu Asp Ser Ser Ser Leu Ala
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 Pro Glu Pro Gly Gln Arg Thr Phe Thr Thr Leu Ser Ser Val Asn Cys
 450 455 460
 Pro Phe Ile Ser Thr Leu Ser Ser Glu Gly Cys Ser Ser Asn Leu Glu
 465 470 475 480
 Ile Gly Asn Tyr Asp Tyr Val Ser Glu Pro Gln Gln Glu Pro Cys Pro
 485 490 495
 Tyr Ala Cys Val Ile Ser Leu Gly Asp Asp Ser Glu Thr Asp Thr Glu
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 Gly Asp Ser Glu Ser Cys Ser Ala Arg Glu Gln Asp Cys Glu Val Lys

515	520	525
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Gln Ser Leu Leu Lys Met His Lys Leu Thr Pro Glu Gln Leu Asp Cys		
545	550	555
Ile His Asp Ile Arg Arg Arg Ser Lys Asn Arg Ile Ala Ala Gln Arg		
565	570	575
Cys Arg Lys Arg Lys Leu Asp Cys Ile Gln Asn Leu Glu Ser Glu Ile		
580	585	590
Glu Lys Leu Gln Ser Glu Lys Glu Ser Leu Leu Lys Glu Arg Asp His		
595	600	605
Ile Leu Ser Thr Leu Gly Glu Thr Lys Gln Asn Leu Thr Gly Leu Cys		
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Gln Gln Val Cys Lys Glu Ala Ala Leu Ser Pro Glu Gln Ile Gln Ile		
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Leu Ala Lys Tyr Ser Ala Ser Asp Cys Pro Leu Ser Phe Leu Ile Ser		
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Glu Lys Gly Lys Ser Thr Pro Asp Gly Glu Leu Ala Phe Thr Ser Val		
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Phe Ser Val Ser Asp Val Pro Pro Thr Ala Pro Pro Pro Cys Gly Arg		
675	680	685
Gly Ser Ser Ala Ala Ser Gln Glu Leu Val Gln Glu Ser Pro Pro Thr		
690	695	700
Thr Ala Ala Ala Pro Glu Gln Ala Thr Leu Leu Glu Pro Cys Arg Gln		
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<211> 822

<212> DNA

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<220>

<221> CDS

<222> (7).. (588)

<400> 517

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      15             20             25             30
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His Arg Cys Cys Phe Leu Cys Met Val Cys Arg Lys Asn Leu Asp Ser
          35             40             45
aca aca gtg gcg att cat gat gaa gag atc tac tgc aaa tcc tgc tac     192
Thr Thr Val Ala Ile His Asp Glu Glu Ile Tyr Cys Lys Ser Cys Tyr
          50             55             60
gga aag aag tat gga cca aaa ggc tat ggt tat ggc cag ggc gct ggc     240
Gly Lys Lys Tyr Gly Pro Lys Gly Tyr Gly Tyr Gly Gln Gly Ala Gly
          65             70             75
acg ctc aac atg gac cgc ggt gag aga ctg ggc atc aag cca gag agt     288
Thr Leu Asn Met Asp Arg Gly Glu Arg Leu Gly Ile Lys Pro Glu Ser
          80             85             90
gct caa cct cac agg cct acg aca aat cca aac act tct aaa ttt gcc     336

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 Gln Lys Tyr Gly Gly Ala Glu Lys Cys Ser Arg Cys Gly Asp Ser Val
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 tat gct gcg gag aag atc att gga gct ggg aag ccc tgg cac aaa aac 432
 Tyr Ala Ala Glu Lys Ile Ile Gly Ala Gly Lys Pro Trp His Lys Asn
 130 135 140
 tgt ttc cgg tgt gcc aag tgt ggg aag agt ctg gag tct aca act ctg 480
 Cys Phe Arg Cys Ala Lys Cys Gly Lys Ser Leu Glu Ser Thr Thr Leu
 145 150 155
 act gag aaa gaa ggc gaa atc tac tgt aaa ggg tgc tac gca aag aac 528
 Thr Glu Lys Glu Gly Glu Ile Tyr Cys Lys Gly Cys Tyr Ala Lys Asn
 160 165 170
 ttt ggg ccc aag gga ttt ggc tat ggt caa ggg gca ggg gcc ctt gtt 576
 Phe Gly Pro Lys Gly Phe Gly Tyr Gly Gln Gly Ala Gly Ala Leu Val
 175 180 185 190
 cat gct cag taa tgggtgaac ccagtaagca cgacagagaa tctccattac 628
 His Ala Gln
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<210> 518

<211> 193

<212> PRT

<213> Mus musculus

<400> 518

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      20             25             30
Cys Cys Phe Leu Cys Met Val Cys Arg Lys Asn Leu Asp Ser Thr Thr
      35             40             45
Val Ala Ile His Asp Glu Glu Ile Tyr Cys Lys Ser Cys Tyr Gly Lys
      50             55             60
Lys Tyr Gly Pro Lys Gly Tyr Gly Tyr Gly Gln Gly Ala Gly Thr Leu
      65             70             75             80
Asn Met Asp Arg Gly Glu Arg Leu Gly Ile Lys Pro Glu Ser Ala Gln
      85             90             95
Pro His Arg Pro Thr Thr Asn Pro Asn Thr Ser Lys Phe Ala Gln Lys
      100            105            110
Tyr Gly Gly Ala Glu Lys Cys Ser Arg Cys Gly Asp Ser Val Tyr Ala
      115            120            125
Ala Glu Lys Ile Ile Gly Ala Gly Lys Pro Trp His Lys Asn Cys Phe
      130            135            140
Arg Cys Ala Lys Cys Gly Lys Ser Leu Glu Ser Thr Thr Leu Thr Glu
      145            150            155            160
Lys Glu Gly Glu Ile Tyr Cys Lys Gly Cys Tyr Ala Lys Asn Phe Gly
      165            170            175
Pro Lys Gly Phe Gly Tyr Gly Gln Gly Ala Gly Ala Leu Val His Ala
      180            185            190
Gln

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<210> 519

<211> 938

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (131).. (712)

<400> 519

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agctgccaga atg cca aac tgg gga gga ggc aag aaa tgt ggg gta tgc 169
      Met Pro Asn Trp Gly Gly Gly Lys Lys Cys Gly Val Cys
          1             5             10
cag aag acg gtc tac ttt gct gag gag gtc cag tgc gag ggc aac agc 217
Gln Lys Thr Val Tyr Phe Ala Glu Glu Val Gln Cys Glu Gly Asn Ser
      15             20             25
ttc cat aaa tcc tgc ttc ctg tgt atg gtc tgc aag aaa aat ctg gac 265
Phe His Lys Ser Cys Phe Leu Cys Met Val Cys Lys Lys Asn Leu Asp
      30             35             40             45
agc acc act gtg gca gtg cat gga gaa gag atc tat tgc aag tca tgt 313
Ser Thr Thr Val Ala Val His Gly Glu Glu Ile Tyr Cys Lys Ser Cys
          50             55             60
tac ggc aag aag tac ggg cca aaa ggc tac ggc tac ggg cag ggc gca 361
Tyr Gly Lys Lys Tyr Gly Pro Lys Gly Tyr Gly Tyr Gly Gln Gly Ala
          65             70             75
ggc acg ctg agc aca gac aag ggg gag tct ctg ggc atc aag cat gag 409
Gly Thr Leu Ser Thr Asp Lys Gly Glu Ser Leu Gly Ile Lys His Glu
          80             85             90
gaa gcc cct gga cac agg ccc acc acc aac ccc aat gca tcc aag ttt 457

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Glu Ala Pro Gly His Arg Pro Thr Thr Asn Pro Asn Ala Ser Lys Phe
 95 100 105
 gcc cag aag att ggc ggc tct gag cgc tgt ccc cgc tgt agc cag gcg 505
 Ala Gln Lys Ile Gly Gly Ser Glu Arg Cys Pro Arg Cys Ser Gln Ala
 110 115 120 125
 gtc tat gct gcg gag aag gtg atc ggt gca ggg aag tcc tgg cat aag 553
 Val Tyr Ala Ala Glu Lys Val Ile Gly Ala Gly Lys Ser Trp His Lys
 130 135 140
 tcc tgc ttc cga tgt gcc aag tgt ggc aaa ggc ctt gag tgc acc acc 601
 Ser Cys Phe Arg Cys Ala Lys Cys Gly Lys Gly Leu Glu Ser Thr Thr
 145 150 155
 ctg gca gac aag gat ggt gag atc tac tgt aaa gga tgc tat gcc aaa 649
 Leu Ala Asp Lys Asp Gly Glu Ile Tyr Cys Lys Gly Cys Tyr Ala Lys
 160 165 170
 aac ttt ggg ccc aaa ggt ttt ggc ttt gga cag gga gct gga gcc ttg 697
 Asn Phe Gly Pro Lys Gly Phe Gly Phe Gly Gln Gly Ala Gly Ala Leu
 175 180 185
 gtt cac tca gag tga ggctgccacc gcctgcgcac cctgcttact cctaagcttt 752
 Val His Ser Glu
 190
 tcatcagcgg tccattccca agccttggac acctccgagc tectctccct cactcagccc 812
 cgctgcacat cactaatgcc ttggacttgg gtatctggct ttttgtggct cagggatctg 872
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 ggagac 938

<210> 520

<211> 193

<212> PRT

<213> Mus musculus

<400> 520

Met Pro Asn Trp Gly Gly Gly Lys Lys Cys Gly Val Cys Gln Lys Thr
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 Val Tyr Phe Ala Glu Glu Val Gln Cys Glu Gly Asn Ser Phe His Lys
 20 25 30
 Ser Cys Phe Leu Cys Met Val Cys Lys Lys Asn Leu Asp Ser Thr Thr
 35 40 45
 Val Ala Val His Gly Glu Glu Ile Tyr Cys Lys Ser Cys Tyr Gly Lys
 50 55 60
 Lys Tyr Gly Pro Lys Gly Tyr Gly Tyr Gly Gln Gly Ala Gly Thr Leu
 65 70 75 80
 Ser Thr Asp Lys Gly Glu Ser Leu Gly Ile Lys His Glu Glu Ala Pro
 85 90 95
 Gly His Arg Pro Thr Thr Asn Pro Asn Ala Ser Lys Phe Ala Gln Lys
 100 105 110
 Ile Gly Gly Ser Glu Arg Cys Pro Arg Cys Ser Gln Ala Val Tyr Ala
 115 120 125
 Ala Glu Lys Val Ile Gly Ala Gly Lys Ser Trp His Lys Ser Cys Phe
 130 135 140
 Arg Cys Ala Lys Cys Gly Lys Gly Leu Glu Ser Thr Thr Leu Ala Asp
 145 150 155 160
 Lys Asp Gly Glu Ile Tyr Cys Lys Gly Cys Tyr Ala Lys Asn Phe Gly
 165 170 175
 Pro Lys Gly Phe Gly Phe Gly Gln Gly Ala Gly Ala Leu Val His Ser
 180 185 190
 Glu

<210> 521

<211> 1111

<212> DNA

<213> *Mus musculus*

<220>

<221> CDS

<222> (1).. (372)

<400> 521

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Val Phe Asp Ile Thr Phe Phe Phe Phe Val Ile Val Ile Leu Leu Ala
  1           5           10           15
atc att caa ggt ctt att att gat gct ttt gga gag ctg cgg gac cag   96
Ile Ile Gln Gly Leu Ile Ile Asp Ala Phe Gly Glu Leu Arg Asp Gln
          20           25           30
cag gag caa gta cgg gaa gac atg gag acc aag tgc ttc atc tgc ggc   144
Gln Glu Gln Val Arg Glu Asp Met Glu Thr Lys Cys Phe Ile Cys Gly
          35           40           45
att ggc aat gac tac ttt gac acg acc cct cat ggt ttt gaa aca cat   192
Ile Gly Asn Asp Tyr Phe Asp Thr Thr Pro His Gly Phe Glu Thr His
          50           55           60
aca ctg caa gag cac aac tta gcc aat tat cta ttc ttt ctg atg tat   240
Thr Leu Gln Glu His Asn Leu Ala Asn Tyr Leu Phe Phe Leu Met Tyr
          65           70           75           80
ttg att aac aag gat gaa aca gaa cat acg ggc cag gaa tcc tat gtg   288
Leu Ile Asn Lys Asp Glu Thr Glu His Thr Gly Gln Glu Ser Tyr Val
          85           90           95
tgg aag atg tac cag gaa agg tgt tgg gac ttc ttc cca gct gga gac   336
Trp Lys Met Tyr Gln Glu Arg Cys Trp Asp Phe Phe Pro Ala Gly Asp

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100	105	110			
tg	ctt	cgg	aag caa tat gaa gat cag ctc ggg taa acc	382	
Cys Phe Arg Lys Gln Tyr Glu Asp Gln Leu Gly					
115	120				
acgacaagct	acagttctga	acagccacct	tcta	atgcaa cagagtc	442
ttaaca	aaaa	tagatt	tg	glaattaa	502
cttg	gc	cacgaag	gat	ggcaaag	
tgtcaagg	aa	tccacctgac	tg	cta	562
gc	ctc	gttt	ct	acaa	
actt	ag	tag	tttt		
caccgacatg	gttcagagag	aaatgcgaaa	tcttga	acac	622
ctga	acgtca	tg	taag	agga	
cccttgccag	ggactgatgg	gcaga	actac	acaaa	682
atcat	gtt	caactca	tg	ttac	
cttc					
gatcta	at	ttt	ccat	ggta	742
ctt	g	ctag	tg	actgt	
ctcca					
gaat	cag	ctt	gaaa	ag	802
cttt					
aagcag	ctaa	agaaa	tagaa		
aacaa	acact	ttgt	cgaa	ac	862
tgaa	atat	cg	atta	ag	
tgc					
itaaaa	aatc	tctt	tagata	tag	922
ctat	gca	ag	tttt	ttat	
gtt	gtg	ttc	caga	agg	
gaca					
actcc	attaa	acag	ctgt	gc	982
tg	ctc	ctc	tg	tcttac	
gca	tg	acact	gca	cttgc	
cag	gtt				
attc	acgtca	ttt	cttc	agt	1042
aac	agctt	gt	cacc	tgt	
ct	gt	gt	tat	ctg	
gaga	aagg	cact	gt		
actg	aa	ttt	cag	aaaa	1102
aat	ctca	at	ctta	tac	
caa	actt	gag	t	gat	
gca	atat	g	gtccc		
atg	taag	tag	tgg	ag	1102
ctgcc	atg	tttt	tagg	tca	
at	ctcca	ata	aaa	agaa	
gtg	ccc	actg			
caata	aa	gt			1111

<210> 522

<211> 123

<212> PRT

<213> Mus musculus

<400> 522

Val Phe Asp Ile Thr Phe Phe Phe Phe Val Ile Val Ile Leu Leu Ala

1	5	10	15
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Ile Ile Gln Gly Leu Ile Ile Asp Ala Phe Gly Glu Leu Arg Asp Gln

20	25	30
----	----	----

Gln Glu Gln Val Arg Glu Asp Met Glu Thr Lys Cys Phe Ile Cys Gly
 35 40 45
 Ile Gly Asn Asp Tyr Phe Asp Thr Thr Pro His Gly Phe Glu Thr His
 50 55 60
 Thr Leu Gln Glu His Asn Leu Ala Asn Tyr Leu Phe Phe Leu Met Tyr
 65 70 75 80
 Leu Ile Asn Lys Asp Glu Thr Glu His Thr Gly Gln Glu Ser Tyr Val
 85 90 95
 Trp Lys Met Tyr Gln Glu Arg Cys Trp Asp Phe Phe Pro Ala Gly Asp
 100 105 110
 Cys Phe Arg Lys Gln Tyr Glu Asp Gln Leu Gly
 115 120

<210> 523

<211> 815

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (765)

<400> 523

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 1 5 10 15
 tct ttc aga gag cgg atc tca agt gag gca gaa gac ttg gtg gca aat 96
 Ser Phe Arg Glu Arg Ile Ser Ser Glu Ala Glu Asp Leu Val Ala Asn
 20 25 30

ttt ttc cca aag aag tta cta gaa ctt gat agt ttt ttg aag gaa cca	144
Phe Phe Pro Lys Lys Leu Leu Glu Leu Asp Ser Phe Leu Lys Glu Pro	
35 40 45	
att cta aat atc cat gac cta act cag atc cac tca gac atg aac ctc	192
Ile Leu Asn Ile His Asp Leu Thr Gln Ile His Ser Asp Met Asn Leu	
50 55 60	
cca gtc cct gac ccc att ctc ctc acc aat agc cac gat gga ctg gat	240
Pro Val Pro Asp Pro Ile Leu Leu Thr Asn Ser His Asp Gly Leu Asp	
65 70 75 80	
ggg ccc act tac aag aag cgc agg ttg gat gaa tgt gaa gag gcc ttt	288
Gly Pro Thr Tyr Lys Lys Arg Arg Leu Asp Glu Cys Glu Glu Ala Phe	
85 90 95	
caa gga acc aag gtg ttt gtg atg ccc aat ggg atg ttg aaa agc aac	336
Gln Gly Thr Lys Val Phe Val Met Pro Asn Gly Met Leu Lys Ser Asn	
100 105 110	
cag cag ctt gtg ggc att att gag aaa gta aaa ccc gag att cgg ctg	384
Gln Gln Leu Val Gly Ile Ile Glu Lys Val Lys Pro Glu Ile Arg Leu	
115 120 125	
ctg atc gag aaa tgt aac acg gtc aaa atg tgg gtt cag ctg ttg att	432
Leu Ile Glu Lys Cys Asn Thr Val Lys Met Trp Val Gln Leu Leu Ile	
130 135 140	
ccc aga ata gaa gat ggg aac aac ttc ggg gta tca att cag gag gaa	480
Pro Arg Ile Glu Asp Gly Asn Asn Phe Gly Val Ser Ile Gln Glu Glu	
145 150 155 160	
aca gtt gct gaa cta aga act gtg gag agt gaa ccc gca tct tac ctg	528
Thr Val Ala Glu Leu Arg Thr Val Glu Ser Glu Pro Ala Ser Tyr Leu	
165 170 175	
gac cag att tct aga tat tat att aca aga gcc ggg ttg gtt tct aaa	576
Asp Gln Ile Ser Arg Tyr Tyr Ile Thr Arg Ala Gly Leu Val Ser Lys	

180	185	190	
ata gct aaa tat ccc cat gtg gag gac tat cgc cgc act gtc aca gag			624
Ile Ala Lys Tyr Pro His Val Glu Asp Tyr Arg Arg Thr Val Thr Glu			
195	200	205	
att gat gag aaa gaa tac atc agc ctc cgg ctc atc atc tca gag ctg			672
Ile Asp Glu Lys Glu Tyr Ile Ser Leu Arg Leu Ile Ile Ser Glu Leu			
210	215	220	
agg aat cag tat gtc act ctc cat gac atg atc ctg aaa aac att gag			720
Arg Asn Gln Tyr Val Thr Leu His Asp Met Ile Leu Lys Asn Ile Glu			
225	230	235	240
aag atc aaa cgg ccc cgg agc agc aat gca gag aca ctg tac tga			765
Lys Ile Lys Arg Pro Arg Ser Ser Asn Ala Glu Thr Leu Tyr			
245	250	255	
ggccagggcc agggccaggg gactttgtga gtctggctca agaccgacat			815

<210> 524

<211> 254

<212> PRT

<213> Mus musculus

<400> 524

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20 25 30	
Phe Phe Pro Lys Lys Leu Leu Glu Leu Asp Ser Phe Leu Lys Glu Pro	
35 40 45	
Ile Leu Asn Ile His Asp Leu Thr Gln Ile His Ser Asp Met Asn Leu	
50 55 60	

Pro Val Pro Asp Pro Ile Leu Leu Thr Asn Ser His Asp Gly Leu Asp
 65 70 75 80
 Gly Pro Thr Tyr Lys Lys Arg Arg Leu Asp Glu Cys Glu Glu Ala Phe
 85 90 95
 Gln Gly Thr Lys Val Phe Val Met Pro Asn Gly Met Leu Lys Ser Asn
 100 105 110
 Gln Gln Leu Val Gly Ile Ile Glu Lys Val Lys Pro Glu Ile Arg Leu
 115 120 125
 Leu Ile Glu Lys Cys Asn Thr Val Lys Met Trp Val Gln Leu Leu Ile
 130 135 140
 Pro Arg Ile Glu Asp Gly Asn Asn Phe Gly Val Ser Ile Gln Glu Glu
 145 150 155 160
 Thr Val Ala Glu Leu Arg Thr Val Glu Ser Glu Pro Ala Ser Tyr Leu
 165 170 175
 Asp Gln Ile Ser Arg Tyr Tyr Ile Thr Arg Ala Gly Leu Val Ser Lys
 180 185 190
 Ile Ala Lys Tyr Pro His Val Glu Asp Tyr Arg Arg Thr Val Thr Glu
 195 200 205
 Ile Asp Glu Lys Glu Tyr Ile Ser Leu Arg Leu Ile Ile Ser Glu Leu
 210 215 220
 Arg Asn Gln Tyr Val Thr Leu His Asp Met Ile Leu Lys Asn Ile Glu
 225 230 235 240
 Lys Ile Lys Arg Pro Arg Ser Ser Asn Ala Glu Thr Leu Tyr
 245 250

<210> 525

<211> 529

<212> DNA

<213> Mus musculus

<400> 525

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 tttaacaac tgactagtta aacttataat caaccaatta atgctattca acacacccaaa 180
 aggacgacca tgaaccctaa taatggtttc cctaatacata ttaatgggat caccaaatct 240
 cctaggccctt ttaccactta catttacact tattaccacac ttatccataa tcctagggtt 300
 ggcaattcaa ctatgagttg aagcggtaat tacaggcttc ggcaacaaac taaaagggtta 360
 actggccaac ttccttccac aggggaattcc aattccacta attccattcc taataattat 420
 ggaaacattt ggcctattta tccagccatt ggcatgggca gtccggctta cggctaacat 480
 tagtgcgga cacttattaa tacacctatt cggaggagct acctcggin 529

<210> 526

<211> 2615

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (697).. (2409)

<400> 526

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 caacaaacgt gatgaatttc agtccccctt ctctctttag gaaaccaggt tgagttctcat 180
 tctatgacct accaaatata aaatgccgtc tcttgaatgc tactttgttt ggatacttta 240
 gaaaaccggg gctgcctctg taacctagcc tgggctatca gagaacttgc tatgcagtac 300
 agacctggga ccccgtgcc ccagcttgcc cagtgtctacg atgacgtgcg agggcttcag 360
 aaaagatgct cagcaaacag tgtccgagag agctgtatcc cgcgggtgcgc caagcgcttc 420

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cctactcagg accagaagcc agcacagcgc gggttcgggg aaacaggctg ccttccactc 480
cctaccgaga agcgtcggga atggcaccgt cgcttagctg ctgagtcctga gtcccgact 540
ccacggagga actacaattc ccagtatcgg agctaccggg actcccggaa gccgaggctt 600
tggcgaccgg aagcagctga gacccaacag gcctgagggtt aattcagcca ggaaagtggg 660
tgggaagggc tgtggggcac ctgtcaattc gccacc atg aat gtc gtc ttt gct 714
                                Met Asn Val Val Phe Ala
                                1           5

gtg aag cag tat att tcc aaa atg ata gag gac agc ggg ccg ggc atg 762
Val Lys Gln Tyr Ile Ser Lys Met Ile Glu Asp Ser Gly Pro Gly Met
                                10           15           20

aag gta ctt ctc atg gat aaa gaa acg act ggt ata gtg agt atg gtc 810
Lys Val Leu Leu Met Asp Lys Glu Thr Thr Gly Ile Val Ser Met Val
                                25           30           35

tac aca cag tca gag att ctt cag aag gaa gta tac ctc ttc gaa cga 858
Tyr Thr Gln Ser Glu Ile Leu Gln Lys Glu Val Tyr Leu Phe Glu Arg
                                40           45           50

att gat tct caa aat cga gag atc atg aaa cac cta aaa gca att tgt 906
Ile Asp Ser Gln Asn Arg Glu Ile Met Lys His Leu Lys Ala Ile Cys
                                55           60           65           70

ttc ctt cga ccc aca aag gag aat gtg gaa tat ctg atc cag gag ctc 954
Phe Leu Arg Pro Thr Lys Glu Asn Val Glu Tyr Leu Ile Gln Glu Leu
                                75           80           85

cga aga ccc aag tac agc ata tat ttt att tat ttc agt aat gtg atc 1002
Arg Arg Pro Lys Tyr Ser Ile Tyr Phe Ile Tyr Phe Ser Asn Val Ile
                                90           95           100

agc aag agt gac gtg aag tca ctg gct gaa gct gac gag cag gaa gtg 1050
Ser Lys Ser Asp Val Lys Ser Leu Ala Glu Ala Asp Glu Gln Glu Val
                                105           110           115

gtg gct gaa gtt cag gaa ttt tat ggt gat tac att gcg gtg aat cca 1098

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Val	Ala	Glu	Val	Gln	Glu	Phe	Tyr	Gly	Asp	Tyr	Ile	Ala	Val	Asn	Pro		
120																	
cat	ttg	ttt	tct	ctc	aat	att	ttg	ggt	tgc	tgt	cag	ggt	cga	aat	tgg	1146	
His	Leu	Phe	Ser	Leu	Asn	Ile	Leu	Gly	Cys	Cys	Gln	Gly	Arg	Asn	Trp		
135																	
gat	cca	gcc	cag	cta	tca	aga	acg	act	caa	ggg	ctg	aca	gct	ctc	ctt	1194	
Asp	Pro	Ala	Gln	Leu	Ser	Arg	Thr	Thr	Gln	Gly	Leu	Thr	Ala	Leu	Leu		
ttg	tct	ctg	aag	aag	tgc	ccc	atg	att	cgt	tat	cag	ctt	tca	tca	gag	1242	
Leu	Ser	Leu	Lys	Lys	Cys	Pro	Met	Ile	Arg	Tyr	Gln	Leu	Ser	Ser	Glu		
gct	gca	aag	aga	ctg	gga	gaa	tgt	gtt	aag	caa	gtg	ata	agt	aaa	gag	1290	
Ala	Ala	Lys	Arg	Leu	Gly	Glu	Cys	Val	Lys	Gln	Val	Ile	Ser	Lys	Glu		
tac	gaa	ctc	ttt	gaa	ttc	cgg	cgg	aca	gag	gtt	cct	ccg	cta	ctt	ctc	1338	
Tyr	Glu	Leu	Phe	Glu	Phe	Arg	Arg	Thr	Glu	Val	Pro	Pro	Leu	Leu	Leu		
att	ctg	gat	cgc	tgc	gat	gac	gcc	att	acc	ccg	ctg	ctc	aac	cag	tgg	1386	
Ile	Leu	Asp	Arg	Cys	Asp	Asp	Ala	Ile	Thr	Pro	Leu	Leu	Asn	Gln	Trp		
215																	
aca	tat	cag	gcc	atg	gtc	cat	gaa	cta	ctg	ggc	ata	aac	aac	aac	cgg	1434	
Thr	Tyr	Gln	Ala	Met	Val	His	Glu	Leu	Leu	Gly	Ile	Asn	Asn	Asn	Arg		
att	gat	ctt	tcc	aga	gtg	cca	gga	atc	agc	aaa	gac	tta	aga	gag	gtg	1482	
Ile	Asp	Leu	Ser	Arg	Val	Pro	Gly	Ile	Ser	Lys	Asp	Leu	Arg	Glu	Val		
gtc	ctg	tcc	gct	gaa	aat	gat	gaa	ttc	tat	gct	aat	aac	atg	tac	ctg	1530	
Val	Leu	Ser	Ala	Glu	Asn	Asp	Glu	Phe	Tyr	Ala	Asn	Asn	Met	Tyr	Leu		

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aac ttt gcc gag att ggt agc aat ata aag aat ctc atg gaa gac ttc 1578
Asn Phe Ala Glu Ile Gly Ser Asn Ile Lys Asn Leu Met Glu Asp Phe
      280              285              290
cag aag aag aga cca aaa gag cag caa aag ctg gaa tcc ata gca gac 1626
Gln Lys Lys Arg Pro Lys Glu Gln Gln Lys Leu Glu Ser Ile Ala Asp
295              300              305              310
atg aag gcc ttt gtt gaa aat tat cca cag ttc aaa aag atg tct ggg 1674
Met Lys Ala Phe Val Glu Asn Tyr Pro Gln Phe Lys Lys Met Ser Gly
      315              320              325
act gtc tca aag cac gtg aca gig gtc ggg gaa ctg tct cgg ttg gtc 1722
Thr Val Ser Lys His Val Thr Val Val Gly Glu Leu Ser Arg Leu Val
      330              335              340
agt gag cgg aat ctg ctg gag gtt tca gaa gtt gag caa gaa ctg gcc 1770
Ser Glu Arg Asn Leu Leu Glu Val Ser Glu Val Glu Gln Glu Leu Ala
      345              350              355
tgt cag aat gac cat tct agt gct ctt cag aat gtg aag aga ctc ctg 1818
Cys Gln Asn Asp His Ser Ser Ala Leu Gln Asn Val Lys Arg Leu Leu
      360              365              370
cag aat ccg aaa gtc aca gaa ttt gat gca gtt cgc ctg gtg atg ctt 1866
Gln Asn Pro Lys Val Thr Glu Phe Asp Ala Val Arg Leu Val Met Leu
375              380              385              390
tat gct cta cat tac gag cgc cac agc agc aac agc ctg cca gga ctc 1914
Tyr Ala Leu His Tyr Glu Arg His Ser Ser Asn Ser Leu Pro Gly Leu
      395              400              405
ata gtg gac ctc agg agt aaa ggt gtt gct gag aag tat cgg aag ctt 1962
Ile Val Asp Leu Arg Ser Lys Gly Val Ala Glu Lys Tyr Arg Lys Leu
      410              415              420
gtg tcg gca gtt gtt gaa tat ggt ggt aaa cgg gtt aga gga agt gac 2010
Val Ser Ala Val Val Glu Tyr Gly Gly Lys Arg Val Arg Gly Ser Asp

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425	430	435	
ctc ttc agt ccc aaa gat gct gtg gct att acc aag cag ttt ctc aaa			2058
Leu Phe Ser Pro Lys Asp Ala Val Ala Ile Thr Lys Gln Phe Leu Lys			
440	445	450	
gga ctg aag gga gtg gaa aat gtg tat aca cag cac cag cct ttc ctg			2106
Gly Leu Lys Gly Val Glu Asn Val Tyr Thr Gln His Gln Pro Phe Leu			
455	460	465	470
cat gag acc ctg gat cat ctc atc aaa gga agg ctt aag gaa aac ctc			2154
His Glu Thr Leu Asp His Leu Ile Lys Gly Arg Leu Lys Glu Asn Leu			
475	480	485	
tat cct tat tta ggc ccc agc aca ctc aga gac agg cct cag gat atc			2202
Tyr Pro Tyr Leu Gly Pro Ser Thr Leu Arg Asp Arg Pro Gln Asp Ile			
490	495	500	
atc gtg ttt att att gga gga gcc acc tat gaa gag gct ctg aca gtc			2250
Ile Val Phe Ile Ile Gly Gly Ala Thr Tyr Glu Glu Ala Leu Thr Val			
505	510	515	
tat aac ctg aac cgc acc act cct gga gtg agg atc gtt ctg gga gga			2298
Tyr Asn Leu Asn Arg Thr Thr Pro Gly Val Arg Ile Val Leu Gly Gly			
520	525	530	
aca aca ata cac aac aca aaa agc ttc cta gag gaa gtc ctg gct tct			2346
Thr Thr Ile His Asn Thr Lys Ser Phe Leu Glu Glu Val Leu Ala Ser			
535	540	545	550
ggg ctg cac agc cgc agc agg gag agc tcg cag gcc acc tca agg tca			2394
Gly Leu His Ser Arg Ser Arg Glu Ser Ser Gln Ala Thr Ser Arg Ser			
555	560	565	
gca aac aga aga tga gatggcagtg gagagcggcg agaatgtcat ggctctctct			2449
Ala Asn Arg Arg			
570			
tacctgccctc ggcccttccc tgcctgaccag gggctttggg gctggccctt gtgtttgctc			2509

tgactcactc caggtaaccc cgattcctgg actgctggaa cagaccccgg gactgcgagc 2569
 cgacgatgag cccaccccga cccacttgtg atctcgtgcc gaattc 2615

<210> 527

<211> 570

<212> PRT

<213> Mus musculus

<400> 527

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Asp	Ser	Gly	Pro	Gly	Met	Lys	Val	Leu	Leu	Met	Asp	Lys	Glu	Thr	Thr
				20					25					30	
Gly	Ile	Val	Ser	Met	Val	Tyr	Thr	Gln	Ser	Glu	Ile	Leu	Gln	Lys	Glu
				35				40						45	
Val	Tyr	Leu	Phe	Glu	Arg	Ile	Asp	Ser	Gln	Asn	Arg	Glu	Ile	Met	Lys
				50				55						60	
His	Leu	Lys	Ala	Ile	Cys	Phe	Leu	Arg	Pro	Thr	Lys	Glu	Asn	Val	Glu
65				70						75				80	
Tyr	Leu	Ile	Gln	Glu	Leu	Arg	Arg	Pro	Lys	Tyr	Ser	Ile	Tyr	Phe	Ile
				85						90				95	
Tyr	Phe	Ser	Asn	Val	Ile	Ser	Lys	Ser	Asp	Val	Lys	Ser	Leu	Ala	Glu
				100						105				110	
Ala	Asp	Glu	Gln	Glu	Val	Val	Ala	Glu	Val	Gln	Glu	Phe	Tyr	Gly	Asp
				115						120				125	
Tyr	Ile	Ala	Val	Asn	Pro	His	Leu	Phe	Ser	Leu	Asn	Ile	Leu	Gly	Cys
				130						135				140	
Cys	Gln	Gly	Arg	Asn	Trp	Asp	Pro	Ala	Gln	Leu	Ser	Arg	Thr	Thr	Gln
145					150						155				160

Gly Leu Thr Ala Leu Leu Leu Ser Leu Lys Lys Cys Pro Met Ile Arg
 165 170 175
 Tyr Gln Leu Ser Ser Glu Ala Ala Lys Arg Leu Gly Glu Cys Val Lys
 180 185 190
 Gln Val Ile Ser Lys Glu Tyr Glu Leu Phe Glu Phe Arg Arg Thr Glu
 195 200 205
 Val Pro Pro Leu Leu Leu Ile Leu Asp Arg Cys Asp Asp Ala Ile Thr
 210 215 220
 Pro Leu Leu Asn Gln Trp Thr Tyr Gln Ala Met Val His Glu Leu Leu
 225 230 235 240
 Gly Ile Asn Asn Asn Arg Ile Asp Leu Ser Arg Val Pro Gly Ile Ser
 245 250 255
 Lys Asp Leu Arg Glu Val Val Leu Ser Ala Glu Asn Asp Glu Phe Tyr
 260 265 270
 Ala Asn Asn Met Tyr Leu Asn Phe Ala Glu Ile Gly Ser Asn Ile Lys
 275 280 285
 Asn Leu Met Glu Asp Phe Gln Lys Lys Arg Pro Lys Glu Gln Gln Lys
 290 295 300
 Leu Glu Ser Ile Ala Asp Met Lys Ala Phe Val Glu Asn Tyr Pro Gln
 305 310 315 320
 Phe Lys Lys Met Ser Gly Thr Val Ser Lys His Val Thr Val Val Gly
 325 330 335
 Glu Leu Ser Arg Leu Val Ser Glu Arg Asn Leu Leu Glu Val Ser Glu
 340 345 350
 Val Glu Gln Glu Leu Ala Cys Gln Asn Asp His Ser Ser Ala Leu Gln
 355 360 365
 Asn Val Lys Arg Leu Leu Gln Asn Pro Lys Val Thr Glu Phe Asp Ala
 370 375 380
 Val Arg Leu Val Met Leu Tyr Ala Leu His Tyr Glu Arg His Ser Ser

385 390 395 400
 Asn Ser Leu Pro Gly Leu Ile Val Asp Leu Arg Ser Lys Gly Val Ala
 405 410 415
 Glu Lys Tyr Arg Lys Leu Val Ser Ala Val Val Glu Tyr Gly Gly Lys
 420 425 430
 Arg Val Arg Gly Ser Asp Leu Phe Ser Pro Lys Asp Ala Val Ala Ile
 435 440 445
 Thr Lys Gln Phe Leu Lys Gly Leu Lys Gly Val Glu Asn Val Tyr Thr
 450 455 460
 Gln His Gln Pro Phe Leu His Glu Thr Leu Asp His Leu Ile Lys Gly
 465 470 475 480
 Arg Leu Lys Glu Asn Leu Tyr Pro Tyr Leu Gly Pro Ser Thr Leu Arg
 485 490 495
 Asp Arg Pro Gln Asp Ile Ile Val Phe Ile Ile Gly Gly Ala Thr Tyr
 500 505 510
 Glu Glu Ala Leu Thr Val Tyr Asn Leu Asn Arg Thr Thr Pro Gly Val
 515 520 525
 Arg Ile Val Leu Gly Gly Thr Thr Ile His Asn Thr Lys Ser Phe Leu
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 Glu Glu Val Leu Ala Ser Gly Leu His Ser Arg Ser Arg Glu Ser Ser
 545 550 555 560
 Gln Ala Thr Ser Arg Ser Ala Asn Arg Arg
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<210> 528

<211> 1508

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (1215)

<400> 528

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gac ctg tca ggg atg gat ttt gcc cac atg tac caa gtg tac aag tcc	96
Asp Leu Ser Gly Met Asp Phe Ala His Met Tyr Gln Val Tyr Lys Ser	
20 25 30	
agg cgg gga ata aaa cgg agc gaa gac agc aag gaa act tac aaa ctg	144
Arg Arg Gly Ile Lys Arg Ser Glu Asp Ser Lys Glu Thr Tyr Lys Leu	
35 40 45	
ccg cac cgg ctg att gag aaa aag aga cgt gac cgg att aac gag tgc	192
Pro His Arg Leu Ile Glu Lys Lys Arg Arg Asp Arg Ile Asn Glu Cys	
50 55 60	
att gcc cag ctg aag gat ctc cta ccc gaa cat ctc aaa ctt act act	240
Ile Ala Gln Leu Lys Asp Leu Leu Pro Glu His Leu Lys Leu Thr Thr	
65 70 75 80	
ttg ggt cac ttg gaa aaa gca gtg gtt ctg gag ctt acg ttg aag cac	288
Leu Gly His Leu Glu Lys Ala Val Val Leu Glu Leu Thr Leu Lys His	
85 90 95	
gtg aaa gca ttg aca aat cta att gat cag cag cag cag aaa atc att	336
Val Lys Ala Leu Thr Asn Leu Ile Asp Gln Gln Gln Gln Lys Ile Ile	
100 105 110	
gcc ctg cag agc ggt tta caa gct ggt gat ttg tgc gga aga aat ctc	384
Ala Leu Gln Ser Gly Leu Gln Ala Gly Asp Leu Ser Gly Arg Asn Leu	
115 120 125	

gag gca ggg caa gaa atg ttc tgc tca ggt ttc cag act tgt gcc cgt 432
 Glu Ala Gly Gln Glu Met Phe Cys Ser Gly Phe Gln Thr Cys Ala Arg
 130 135 140
 gag gta ctt cag tac ctg gcg aag cat gag aac act cgg gac ctg aaa 480
 Glu Val Leu Gln Tyr Leu Ala Lys His Glu Asn Thr Arg Asp Leu Lys
 145 150 155 160
 tct tcc cag ctc gtc act cat ctc cat cgt gtg gtc tcg gag ctg ctg 528
 Ser Ser Gln Leu Val Thr His Leu His Arg Val Val Ser Glu Leu Leu
 165 170 175
 cag ggt ggt gct tcc agg aaa cca ttg gac tcg gct ccc aaa gcc gtc 576
 Gln Gly Gly Ala Ser Arg Lys Pro Leu Asp Ser Ala Pro Lys Ala Val
 180 185 190
 gac ttg aaa gag aag ccc agc ttc cta gcc aag gga tca gaa ggc cca 624
 Asp Leu Lys Glu Lys Pro Ser Phe Leu Ala Lys Gly Ser Glu Gly Pro
 195 200 205
 ggg aaa aac tgt gtg cca gtc atc cag cgg act ttt gct ccc tcg ggt 672
 Gly Lys Asn Cys Val Pro Val Ile Gln Arg Thr Phe Ala Pro Ser Gly
 210 215 220
 ggg gag cag agc ggc agt gac acg gac aca gac agt ggc tat gga ggt 720
 Gly Glu Gln Ser Gly Ser Asp Thr Asp Thr Asp Ser Gly Tyr Gly Gly
 225 230 235 240
 gaa ttg gag aaa ggg gac ttg cgc agt gaa cag ccg tac ttc aaa agc 768
 Glu Leu Glu Lys Gly Asp Leu Arg Ser Glu Gln Pro Tyr Phe Lys Ser
 245 250 255
 gac cat gga cgc agg ttc gcc gtg gga gaa cgt gtc agc aca att aag 816
 Asp His Gly Arg Arg Phe Ala Val Gly Glu Arg Val Ser Thr Ile Lys
 260 265 270
 caa gaa tcc gaa gag ccc ccc acc aca aag agc cga atg cag ctc tca 864
 Gln Glu Ser Glu Glu Pro Pro Thr Thr Lys Ser Arg Met Gln Leu Ser

275	280	285	
gaa gag gaa ggc cac ttc gcg ggc agt gat ctg atg ggt tcc cca ttt			912
Glu Glu Glu Gly His Phe Ala Gly Ser Asp Leu Met Gly Ser Pro Phe			
290	295	300	
ctt ggg cca cac cca cat cag cct cct ttt tgc ctt ccc ttc tat ctc			960
Leu Gly Pro His Pro His Gln Pro Pro Phe Cys Leu Pro Phe Tyr Leu			
305	310	315	320
atc cca cca tcg gcc act gcc tac ctg cct atg ctg gag aaa tgc tgg			1008
Ile Pro Pro Ser Ala Thr Ala Tyr Leu Pro Met Leu Glu Lys Cys Trp			
325	330	335	
tac ccc acc tct gtg cca gtg tta tac cca ggc ctc aac acc tca gct			1056
Tyr Pro Thr Ser Val Pro Val Leu Tyr Pro Gly Leu Asn Thr Ser Ala			
340	345	350	
gca gcc ctc tcc agc ttc atg aac cca gac aag ata ccg act ccc ttg			1104
Ala Ala Leu Ser Ser Phe Met Asn Pro Asp Lys Ile Pro Thr Pro Leu			
355	360	365	
ctt ctg ccc cag aga ctc cct tct cct ttg gca cat tcg tcc ctt gac			1152
Leu Leu Pro Gln Arg Leu Pro Ser Pro Leu Ala His Ser Ser Leu Asp			
370	375	380	
tct tcg gcc ttg ctc cag gct ttg aag cag atc cct cct tta aac tta			1200
Ser Ser Ala Leu Leu Gln Ala Leu Lys Gln Ile Pro Pro Leu Asn Leu			
385	390	395	400
gaa acc aaa gac taa actctggagg gatctcctgc tgccttgctt tctttcctcc			1255
Glu Thr Lys Asp			
405			
ctaaticcaa aaaccacgaa ggtttccttg agtgcagaga gatcagccca ccctgcagac			1315
ccacagagaa gattcagagt gtgtgtgaga gtgagtgagt gtgcgtgcgt gcgtgcttgt			1375
atgtatgttt gtatatgtag gacaataagt tccttctgac acaagggaga cacgagaagg			1435
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ccagagaaga gcc

1508

<210> 529

<211> 404

<212> PRT

<213> Mus musculus:

<400> 529

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20 25 30
Arg Arg Gly Ile Lys Arg Ser Glu Asp Ser Lys Glu Thr Tyr Lys Leu
35 40 45
Pro His Arg Leu Ile Glu Lys Lys Arg Arg Asp Arg Ile Asn Glu Cys
50 55 60
Ile Ala Gln Leu Lys Asp Leu Leu Pro Glu His Leu Lys Leu Thr Thr
65 70 75 80
Leu Gly His Leu Glu Lys Ala Val Val Leu Glu Leu Thr Leu Lys His
85 90 95
Val Lys Ala Leu Thr Asn Leu Ile Asp Gln Gln Gln Gln Lys Ile Ile
100 105 110
Ala Leu Gln Ser Gly Leu Gln Ala Gly Asp Leu Ser Gly Arg Asn Leu
115 120 125
Glu Ala Gly Gln Glu Met Phe Cys Ser Gly Phe Gln Thr Cys Ala Arg
130 135 140
Glu Val Leu Gln Tyr Leu Ala Lys His Glu Asn Thr Arg Asp Leu Lys
145 150 155 160
Ser Ser Gln Leu Val Thr His Leu His Arg Val Val Ser Glu Leu Leu

	165	170	175
Gln Gly Gly Ala Ser Arg Lys Pro Leu Asp Ser Ala Pro Lys Ala Val			
	180	185	190
Asp Leu Lys Glu Lys Pro Ser Phe Leu Ala Lys Gly Ser Glu Gly Pro			
	195	200	205
Gly Lys Asn Cys Val Pro Val Ile Gln Arg Thr Phe Ala Pro Ser Gly			
	210	215	220
Gly Glu Gln Ser Gly Ser Asp Thr Asp Thr Asp Ser Gly Tyr Gly Gly			
225	230	235	240
Glu Leu Glu Lys Gly Asp Leu Arg Ser Glu Gln Pro Tyr Phe Lys Ser			
	245	250	255
Asp His Gly Arg Arg Phe Ala Val Gly Glu Arg Val Ser Thr Ile Lys			
	260	265	270
Gln Glu Ser Glu Glu Pro Pro Thr Thr Lys Ser Arg Met Gln Leu Ser			
	275	280	285
Glu Glu Glu Gly His Phe Ala Gly Ser Asp Leu Met Gly Ser Pro Phe			
290	295	300	
Leu Gly Pro His Pro His Gln Pro Pro Phe Cys Leu Pro Phe Tyr Leu			
305	310	315	320
Ile Pro Pro Ser Ala Thr Ala Tyr Leu Pro Met Leu Glu Lys Cys Trp			
	325	330	335
Tyr Pro Thr Ser Val Pro Val Leu Tyr Pro Gly Leu Asn Thr Ser Ala			
	340	345	350
Ala Ala Leu Ser Ser Phe Met Asn Pro Asp Lys Ile Pro Thr Pro Leu			
	355	360	365
Leu Leu Pro Gln Arg Leu Pro Ser Pro Leu Ala His Ser Ser Leu Asp			
	370	375	380
Ser Ser Ala Leu Leu Gln Ala Leu Lys Gln Ile Pro Pro Leu Asn Leu			
385	390	395	400

Glu Thr Lys Asp

<210> 530

<211> 363

<212> DNA

<213> Mus musculus

<400> 530

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ttaatagaga gaggagaatc ctctatcaa gataggatga aggacattgt aaaggaattt 180
gaagataaag ggittgtgca agtggatgat ggcagaaaaa ttgtgttcgt gcctgggtgt 240
tctgtgccat taacgatagt gaaatcagat gggggctata cctatgacac atctgacctg 300
gctgccatca aacagagact gtttgaagta aaagcataca agattattta tgtggiggac 360
aat 363
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<210> 531

<211> 653

<212> DNA

<213> Mus musculus

<400> 531

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ctatgccica cacccatatt cagtggttta gcataatgaa ctcccttggt attgtcctct 180
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ataaccagat ggactctacg gaagatgcc aggaagaatt tggctggaaa ctagttcatg 300
gggatatatt ccgtcctcca agaaagggga tgcgtctgtc tgtcttccca ggatctggaa 360
cacagatttt aattatgact ttgttaactc tgtttttgc atgtctggga ttcttgtccc 420
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ctgccaaicg aggagccctg atgacatgig ctgtggctctt gtagggctgcta ctgggcacac 480
 ctgctggcta tgttgctgcc agattctaca aatacttttg tggtagaaaag tggaaaacaa 540
 atgtataatt gacatcatta caatatcctg ggattgtatt tactgacttc tttataatga 600
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<210> 532

<211> 1322

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (487).. (1269)

<400> 532

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 ctttctctga gcccaggacc ctcccacccc caggctcaca ttctttctct caggatcttc 180
 aagcgggtct cttaagctcc ctcttcccca ggacgttigga gtcacagcct cagatctttc 240
 tctccaatct cacaagtggg ccagaactcc tttataatgt ctggatcccc aacagcaagc 300
 tctccccac actaaaattc ggggatctag agctctgccc tagctttctc agcccctagc 360
 tccatcctcc agcaagactc aagacagctc cggaacacc tccttcccc agttccccag 420
 acaacaagat ctcaggctcc tccctcggac ttctcttag ttccaccctc ttctcagag 480
 gccacc atg gga cgc ccc cca ccc tgt gca atc cag ccg tgg atc ctt 528

Met Gly Arg Pro Pro Pro Cys Ala Ile Gln Pro Trp Ile Leu

1

5

10

ctg ctt ctg ttc atg gga gcg tgg gca ggg ctc acc aga gct cag ggc 576

Leu Leu Leu Phe Met Gly Ala Trp Ala Gly Leu Thr Arg Ala Gln Gly

15

20

25

30

tcc aag atc ctg gaa ggt cga gag tgt ata ccc cac tcc cag cct tgg	624
Ser Lys Ile Leu Glu Gly Arg Glu Cys Ile Pro His Ser Gln Pro Trp	
35 40 45	
cag gca gcc ttg ttc cag ggc gag aga ctg atc tgt ggg ggt gtc ctg	672
Gln Ala Ala Leu Phe Gln Gly Glu Arg Leu Ile Cys Gly Gly Val Leu	
50 55 60	
gtt gga gac aga tgg gtc ctc acg gca gcc cac tgc aaa aaa cag aag	720
Val Gly Asp Arg Trp Val Leu Thr Ala Ala His Cys Lys Lys Gln Lys	
65 70 75	
tac tcc gtg cgt ctg ggt gat cat agc ctc cag agc aga gat cag ccg	768
Tyr Ser Val Arg Leu Gly Asp His Ser Leu Gln Ser Arg Asp Gln Pro	
80 85 90	
gag cag gag atc cag gtg gct cag tct atc cag cat cct tgc tac aac	816
Glu Gln Glu Ile Gln Val Ala Gln Ser Ile Gln His Pro Cys Tyr Asn	
95 100 105 110	
aac agc aac cca gaa gat cac agt cac gat ata atg ctc att cga ctg	864
Asn Ser Asn Pro Glu Asp His Ser His Asp Ile Met Leu Ile Arg Leu	
115 120 125	
cag aac tca gca aac ctc ggg gac aag gtg aag ccg gtc caa ctg gcc	912
Gln Asn Ser Ala Asn Leu Gly Asp Lys Val Lys Pro Val Gln Leu Ala	
130 135 140	
aat ctg tgt ccc aaa gtt ggc cag aag tgc atc ata tca ggc tgg ggc	960
Asn Leu Cys Pro Lys Val Gly Gln Lys Cys Ile Ile Ser Gly Trp Gly	
145 150 155	
act gtc acc agc cct caa gag aac ttt cca aac acc ctc aac tgt gcg	1008
Thr Val Thr Ser Pro Gln Glu Asn Phe Pro Asn Thr Leu Asn Cys Ala	
160 165 170	
gaa gtg aaa atc tat tcc cag aac aag tgt gag aga gcc tat cca ggg	1056
Glu Val Lys Ile Tyr Ser Gln Asn Lys Cys Glu Arg Ala Tyr Pro Gly	

175	180	185	190	
aag atc acc gag ggc atg gtc tgt gct ggc agc agc aat gga gct gac	1104			
Lys Ile Thr Glu Gly Met Val Cys Ala Gly Ser Ser Asn Gly Ala Asp				
195	200	205		
acg tgc cag ggt gac tca gga ggc cct ctg gtg tgc gac ggg atg ctc	1152			
Thr Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Asp Gly Met Leu				
210	215	220		
cag ggc atc acc tca tgg ggc tca gac ccc tgt ggg aaa ccc gag aaa	1200			
Gln Gly Ile Thr Ser Trp Gly Ser Asp Pro Cys Gly Lys Pro Glu Lys				
225	230	235		
cct gga gtc tac acc aaa atc tgc cgc tac act acc tgg atc aag aag	1248			
Pro Gly Val Tyr Thr Lys Ile Cys Arg Tyr Thr Thr Trp Ile Lys Lys				
240	245	250		
acc atg gac aac agg gac tga tcctgggtgtg tgtgtggggg gggggttgtc	1299			
Thr Met Asp Asn Arg Asp				
255	260			
aataaacacc accattgggtt ggc	1322			

<210> 533

<211> 260

<212> PRT

<213> Mus musculus

<400> 533

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35 40 45
 Ala Leu Phe Gln Gly Glu Arg Leu Ile Cys Gly Gly Val Leu Val Gly
 50 55 60
 Asp Arg Trp Val Leu Thr Ala Ala His Cys Lys Lys Gln Lys Tyr Ser
 65 70 75 80
 Val Arg Leu Gly Asp His Ser Leu Gln Ser Arg Asp Gln Pro Glu Gln
 85 90 95
 Glu Ile Gln Val Ala Gln Ser Ile Gln His Pro Cys Tyr Asn Asn Ser
 100 105 110
 Asn Pro Glu Asp His Ser His Asp Ile Met Leu Ile Arg Leu Gln Asn
 115 120 125
 Ser Ala Asn Leu Gly Asp Lys Val Lys Pro Val Gln Leu Ala Asn Leu
 130 135 140
 Cys Pro Lys Val Gly Gln Lys Cys Ile Ile Ser Gly Trp Gly Thr Val
 145 150 155 160
 Thr Ser Pro Gln Glu Asn Phe Pro Asn Thr Leu Asn Cys Ala Glu Val
 165 170 175
 Lys Ile Tyr Ser Gln Asn Lys Cys Glu Arg Ala Tyr Pro Gly Lys Ile
 180 185 190
 Thr Glu Gly Met Val Cys Ala Gly Ser Ser Asn Gly Ala Asp Thr Cys
 195 200 205
 Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Asp Gly Met Leu Gln Gly
 210 215 220
 Ile Thr Ser Trp Gly Ser Asp Pro Cys Gly Lys Pro Glu Lys Pro Gly
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 245 250 255
 Asp Asn Arg Asp
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<210> 534

<211> 14775

<212> DNA

<213> *Mus musculus*

<400> 534

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gaaagaaaga gatccctgaa tctaatttta ctgggtttcc tgggtgacta agaccattaa 1920
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<210> 536

<211> 215

<212> PRT

<213> Mus musculus

<400> 536

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						20				25					30
Asp	Ala	Ser	Val	Asn	Phe	Ser	Glu	Phe	Ser	Lys	Lys	Cys	Ser	Glu	Arg
						35				40					45
Trp	Lys	Thr	Met	Ser	Ala	Lys	Glu	Lys	Gly	Lys	Phe	Glu	Asp	Met	Ala
						50				55					60

Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
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 Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
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 Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
 100 105 110
 Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
 115 120 125
 Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
 130 135 140
 Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
 145 150 155 160
 Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
 165 170 175
 Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Asp Asp Glu Glu
 180 185 190
 Asp Glu Glu Asp Glu Glu Glu Glu Glu Glu Glu Asp Glu Asp Glu :
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 Glu Glu Asp Asp Asp Asp Glu
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<210> 537

<211> 1080

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (85).. (489)

<400> 537

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Met Asp Phe Val Met Lys Gln Ala Leu

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5

gga ggg gcc acc aag gac atg ggg aag atg ctg ggg gga gag gag gag 159
 Gly Gly Ala Thr Lys Asp Met Gly Lys Met Leu Gly Gly Glu Glu Glu

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15

20

25

aag gac cca gac gca cag aag aag gag gag gag cgg cag gag gcc ctg 207
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30

35

40

agg cag cag gag gaa gag cgc aag gcg aaa cac gcc cgc atg gaa gcc 255
 Arg Gln Gln Glu Glu Glu Arg Lys Ala Lys His Ala Arg Met Glu Ala

45

50

55

gag cgc gag aag gtc cgg cag cag atc cga gac aag tat ggg ctg aag 303
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60

65

70

aag aag gaa gag aaa gag gca gag gag aag gca gcc ctg gaa cag ccc 351
 Lys Lys Glu Glu Lys Glu Ala Glu Glu Lys Ala Ala Leu Glu Gln Pro

75

80

85

tgc gag gga agc ctg acc cga ccc aag aag gcc atc cct gca ggc tgt 399
 Cys Glu Gly Ser Leu Thr Arg Pro Lys Lys Ala Ile Pro Ala Gly Cys

90

95

100

105

ggg gac gag gag gag gag gaa gag gag agc atc ctg gac aca gtg ctc 447
 Gly Asp Glu Glu Glu Glu Glu Glu Glu Ser Ile Leu Asp Thr Val Leu

110

115

120

aaa tat ctg cca ggg ccg ctg cag gac atg ttc aag aag taa 489
 Lys Tyr Leu Pro Gly Pro Leu Gln Asp Met Phe Lys Lys

125 130 135
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<210> 538

<211> 134

<212> PRT

<213> Mus musculus

<400> 538

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 35 40 45
 Lys Ala Lys His Ala Arg Met Glu Ala Glu Arg Glu Lys Val Arg Gln
 50 55 60
 Gln Ile Arg Asp Lys Tyr Gly Leu Lys Lys Lys Glu Glu Lys Glu Ala
 65 70 75 80
 Glu Glu Lys Ala Ala Leu Glu Gln Pro Cys Glu Gly Ser Leu Thr Arg

	85	90	95
Pro	Lys	Lys	Ala
Ile	Pro	Ala	Gly
Cys	Gly	Asp	Glu
Glu	Glu	Glu	Glu
Glu			
	100	105	110
Glu	Glu	Ser	Ile
Leu	Asp	Thr	Val
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Lys	Lys		
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<210> 539

<211> 2465

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (331).. (1713)

<400> 539

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atctgctgta ttggtgagtc ttcttgcgga ggtcaggctt cctgatctgc gggcttagcc 300
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Met Ala Glu Ser Val Asp His Lys

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5

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Glu Leu Ser Glu Ser Asn Gln Glu Glu Leu Gly Ser Gln Val Met Ala

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10

15

20

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 25 30 35 40
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 Pro Gly Asp Gly Gly Gln His Gly Glu Glu Thr Val Ala Ala Gly Val
 45 50 55
 ggg gaa gag gga aaa ggt gaa gaa gct gct gca ggg tct ggg gaa gat 546
 Gly Glu Glu Gly Lys Gly Glu Glu Ala Ala Ala Gly Ser Gly Glu Asp
 60 65 70
 gct ggg aag tgc gga ggc act gat gag gac tca gac tca gac cgt cca 594
 Ala Gly Lys Cys Gly Gly Thr Asp Glu Asp Ser Asp Ser Asp Arg Pro
 75 80 85
 aaa gga ctt atc ggt tat ctt tta gat acc gat ttc gtt gaa agt ctc 642
 Lys Gly Leu Ile Gly Tyr Leu Leu Asp Thr Asp Phe Val Glu Ser Leu
 90 95 100
 cca gtg aaa gtt aag tgc cga gtg cta gct ctt aaa aag ctt caa aca 690
 Pro Val Lys Val Lys Cys Arg Val Leu Ala Leu Lys Lys Leu Gln Thr
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 aga gct gcc cat ttg gaa tcc aaa ttc ctg agg gaa ttt cat gac att 738
 Arg Ala Ala His Leu Glu Ser Lys Phe Leu Arg Glu Phe His Asp Ile
 125 130 135
 gaa agg aag ttt gct gaa atg tac caa ccc tta cta gaa aaa aga cga 786
 Glu Arg Lys Phe Ala Glu Met Tyr Gln Pro Leu Leu Glu Lys Arg Arg
 140 145 150
 cag atc atc aat gca gtc tat gag ccc aca gaa gag gaa tgt gag tat 834
 Gln Ile Ile Asn Ala Val Tyr Glu Pro Thr Glu Glu Glu Cys Glu Tyr
 155 160 165
 aaa tcg gac tgt gag gac tat ttt gag gag gag atg gat gag gag gaa 882
 Lys Ser Asp Cys Glu Asp Tyr Phe Glu Glu Glu Met Asp Glu Glu Glu

170	175	180	
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Glu Thr Asn Gly Asn Glu Asp Gly Met Val His Glu Tyr Val Asp Glu			
185	190	195	200
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Asp Asp Gly Tyr Glu Asp Cys Tyr Tyr Asp Tyr Asp Asp Glu Glu Glu			
	205	210	215
gag gag gag gaa gat gac agc gct ggg gcc acc gga gga gaa gag gtt			1026
Glu Glu Glu Glu Asp Asp Ser Ala Gly Ala Thr Gly Gly Glu Glu Val			
	220	225	230
aac gaa gag gat cct aag ggg att ccg gat ttt tgg ttg act gtt tta			1074
Asn Glu Glu Asp Pro Lys Gly Ile Pro Asp Phe Trp Leu Thr Val Leu			
	235	240	245
aaa aat gtt gaa gca ctc act cct atg att aag aaa tat gat gag cct			1122
Lys Asn Val Glu Ala Leu Thr Pro Met Ile Lys Lys Tyr Asp Glu Pro			
	250	255	260
att ctg aag ctg ctg aca gat att aaa gtg aag ctt tcg gat ccc ggg			1170
Ile Leu Lys Leu Leu Thr Asp Ile Lys Val Lys Leu Ser Asp Pro Gly			
265	270	275	280
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Glu Pro Leu Ser Phe Thr Leu Glu Phe His Phe Lys Pro Asn Glu Tyr			
	285	290	295
ttt aaa aat gag ctg ttg aca aag act tat gtg ctg aag tca aag ctt			1266
Phe Lys Asn Glu Leu Leu Thr Lys Thr Tyr Val Leu Lys Ser Lys Leu			
	300	305	310
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Ala Cys Tyr Asp Pro His Pro Tyr Arg Gly Thr Ala Ile Glu Tyr Ala			
	315	320	325
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Thr Gly Cys Asp Ile Asp Trp Asn Glu Gly Lys Asn Val Thr Leu Arg
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 Thr Ile Lys Lys Lys Gln Arg His Arg Val Trp Gly Thr Val Arg Thr
 345 350 355 360
 gtg act gaa gat ttt ccc aag gac tct ttc ttc aat ttc ttc tct cct 1458
 Val Thr Glu Asp Phe Pro Lys Asp Ser Phe Phe Asn Phe Phe Ser Pro
 365 370 375
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 His Gly Ile Ser Leu Asn Gly Gly Val Glu Asn Asp Asp Phe Leu Leu
 380 385 390
 ggt cat aat ctg cgt act tac ata att cca aga tca gtg tta ttt ttc 1554
 Gly His Asn Leu Arg Thr Tyr Ile Ile Pro Arg Ser Val Leu Phe Phe
 395 400 405
 tca gga gat gca ctt gaa tct cag cag gag ggt gta gtt agg gaa gtt 1602
 Ser Gly Asp Ala Leu Glu Ser Gln Gln Glu Gly Val Val Arg Glu Val
 410 415 420
 aat gac gaa ata tat gac aaa att att tat gat gat tgg atg gct gca 1650
 Asn Asp Glu Ile Tyr Asp Lys Ile Ile Tyr Asp Asp Trp Met Ala Ala
 425 430 435 440
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 Ile Glu Glu Val Lys Ala Cys Cys Lys Asn Leu Glu Ala Leu Val Glu
 445 450 455
 gat att gat cgt taa aacagagtag atgcttttga aactaactgc tctacatgca 1753
 Asp Ile Asp Arg
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 agattatttg ttgcaaaga aaatattgga aacctaccta agagtgcitt gctattttcc 2053
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<210> 540

<211> 460

<212> PRT

<213> Mus musculus

<400> 540

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				20				25					30		
Arg	Ser	Glu	Gly	Val	Ser	Ile	Glu	Pro	Gly	Asp	Gly	Gly	Gln	His	Gly
				35				40					45		
Glu	Glu	Thr	Val	Ala	Ala	Gly	Val	Gly	Glu	Glu	Gly	Lys	Gly	Glu	Glu
				50				55				60			
Ala	Ala	Ala	Gly	Ser	Gly	Glu	Asp	Ala	Gly	Lys	Cys	Gly	Gly	Thr	Asp
65				70				75				80			
Glu	Asp	Ser	Asp	Ser	Asp	Arg	Pro	Lys	Gly	Leu	Ile	Gly	Tyr	Leu	Leu
				85				90				95			
Asp	Thr	Asp	Phe	Val	Glu	Ser	Leu	Pro	Val	Lys	Val	Lys	Cys	Arg	Val

100	105	110
Leu Ala Leu Lys Lys Leu Gln Thr Arg Ala Ala His Leu Glu Ser Lys		
115	120	125
Phe Leu Arg Glu Phe His Asp Ile Glu Arg Lys Phe Ala Glu Met Tyr		
130	135	140
Gln Pro Leu Leu Glu Lys Arg Arg Gln Ile Ile Asn Ala Val Tyr Glu		
145	150	155
Pro Thr Glu Glu Glu Cys Glu Tyr Lys Ser Asp Cys Glu Asp Tyr Phe		
165	170	175
Glu Glu Glu Met Asp Glu Glu Glu Glu Thr Asn Gly Asn Glu Asp Gly		
180	185	190
Met Val His Glu Tyr Val Asp Glu Asp Asp Gly Tyr Glu Asp Cys Tyr		
195	200	205
Tyr Asp Tyr Asp Asp Glu Glu Glu Glu Glu Glu Glu Asp Asp Ser Ala		
210	215	220
Gly Ala Thr Gly Gly Glu Glu Val Asn Glu Glu Asp Pro Lys Gly Ile		
225	230	235
Pro Asp Phe Trp Leu Thr Val Leu Lys Asn Val Glu Ala Leu Thr Pro		
245	250	255
Met Ile Lys Lys Tyr Asp Glu Pro Ile Leu Lys Leu Leu Thr Asp Ile		
260	265	270
Lys Val Lys Leu Ser Asp Pro Gly Glu Pro Leu Ser Phe Thr Leu Glu		
275	280	285
Phe His Phe Lys Pro Asn Glu Tyr Phe Lys Asn Glu Leu Leu Thr Lys		
290	295	300
Thr Tyr Val Leu Lys Ser Lys Leu Ala Cys Tyr Asp Pro His Pro Tyr		
305	310	315
Arg Gly Thr Ala Ile Glu Tyr Ala Thr Gly Cys Asp Ile Asp Trp Asn		
325	330	335

Glu Gly Lys Asn Val Thr Leu Arg Thr Ile Lys Lys Lys Gln Arg His

340

345

350

Arg Val Trp Gly Thr Val Arg Thr Val Thr Glu Asp Phe Pro Lys Asp

355

360

365

Ser Phe Phe Asn Phe Phe Ser Pro His Gly Ile Ser Leu Asn Gly Gly

370

375

380

Val Glu Asn Asp Asp Phe Leu Leu Gly His Asn Leu Arg Thr Tyr Ile

385

390

395

400

Ile Pro Arg Ser Val Leu Phe Phe Ser Gly Asp Ala Leu Glu Ser Gln

405

410

415

Gln Glu Gly Val Val Arg Glu Val Asn Asp Glu Ile Tyr Asp Lys Ile

420

425

430

Ile Tyr Asp Asp Trp Met Ala Ala Ile Glu Glu Val Lys Ala Cys Cys

435

440

445

Lys Asn Leu Glu Ala Leu Val Glu Asp Ile Asp Arg

450

455

460

<210> 541

<211> 104

<212> DNA

<213> Mus musculus

<400> 541

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104

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<211> 262

<212> DNA

<213> Mus musculus

<400> 542

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tgtaccaaca ccaaaaggca cctgagcgat ttgatgtcat tgacctggac ccctatggca 180
gccccgcccc ctctctggat gcagcagtcg aggcctgtgag tgatggagga ctctgtgtg 240
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<210> 543

<211> 280

<212> DNA

<213> Mus musculus

<400> 543

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aggatatgac cggggcggct accggggccg aggtggggta cgtgggggct tcagatgggt 180
gcggggtggt ggggacagag agcggtttgg ccctggcaag atggactcca ggggcgagca 240
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<210> 544

<211> 339

<212> DNA

<213> Mus musculus

<400> 544

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cagttgagat aaccatcagt ttattaaaga gggaaatgga ccaaacaatg gctgccaatg 180
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<212> DNA

<213> Mus musculus

<400> 545

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<212> DNA

<213> Mus musculus

<400> 546

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<210> 547

<211> 531

<212> DNA

<213> Mus musculus

<400> 547

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<211> 515

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<213> Mus musculus

<400> 548

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<400> 549

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1

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5

10

15

tgg gag gtg ccc gaa cga tac cag aac ctg tcc ccg gtg ggc tgc ggc 395
 Trp Glu Val Pro Glu Arg Tyr Gln Asn Leu Ser Pro Val Gly Ser Gly

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25

30

gcc tat ggc tgc gtg tgt gct gct ttt gat aca aag acg ggg cat cgt 443
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35

40

45

gtg gca gtt aag aag ctg tgc aga ccg ttt cag tcc atc att cac gcc 491
 Val Ala Val Lys Lys Leu Ser Arg Pro Phe Gln Ser Ile Ile His Ala

50

55

60

65

aaa agg acc tac cga gag ttg cgt ctg ctg aag cac atg aaa cac gaa 539
 Lys Arg Thr Tyr Arg Glu Leu Arg Leu Leu Lys His Met Lys His Glu

70

75

80

aat gtg att ggt ctg ttg gat gtg ttc aca ccc gca agg tca ctg gag 587
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85

90

95

gaa ttc aat gac gtg tac ctg gtg acc cat ctc atg ggg gcg gac ctg 635

Glu Phe Asn Asp Val Tyr Leu Val Thr His Leu Met Gly Ala Asp Leu
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 Ile Ile His Arg Asp Leu Lys Pro Ser Asn Leu Ala Val Asn Glu Asp
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<211> 360

<212> PRT

<213> Mus musculus

<400> 550

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Arg Val Ala Val Lys Lys Leu Ser Arg Pro Phe Gln Ser Ile Ile His
      50             55             60
Ala Lys Arg Thr Tyr Arg Glu Leu Arg Leu Leu Lys His Met Lys His
      65             70             75             80
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      85             90             95
Glu Glu Phe Asn Asp Val Tyr Leu Val Thr His Leu Met Gly Ala Asp
      100            105            110
Leu Asn Asn Ile Val Lys Cys Gln Lys Leu Thr Asp Asp His Val Gln
      115            120            125
Phe Leu Ile Tyr Gln Ile Leu Arg Gly Leu Lys Tyr Ile His Ser Ala
      130            135            140
Asp Ile Ile His Arg Asp Leu Lys Pro Ser Asn Leu Ala Val Asn Glu
      145            150            155            160
Asp Cys Glu Leu Lys Ile Leu Asp Phe Gly Leu Ala Arg His Thr Asp
      165            170            175
Asp Glu Met Thr Gly Tyr Val Ala Thr Arg Trp Tyr Arg Ala Pro Glu
      180            185            190

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Ile Met Leu Asn Trp Met His Tyr Asn Gln Thr Val Asp Ile Trp Ser
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 Gly Thr Asp His Ile Asp Gln Leu Lys Leu Ile Leu Arg Leu Val Gly
 225 230 235 240
 Thr Pro Gly Ala Glu Leu Leu Lys Lys Ile Ser Ser Glu Ser Ala Arg
 245 250 255
 Asn Tyr Ile Gln Ser Leu Ala Gln Met Pro Lys Met Asn Phe Ala Asn
 260 265 270
 Val Phe Ile Gly Ala Asn Pro Leu Ala Val Asp Leu Leu Glu Lys Met
 275 280 285
 Leu Val Leu Asp Ser Asp Lys Arg Ile Thr Ala Ala Gln Ala Leu Ala
 290 295 300
 His Ala Tyr Phe Ala Gln Tyr His Asp Pro Asp Asp Glu Pro Val Ala
 305 310 315 320
 Asp Pro Tyr Asp Gln Ser Phe Glu Ser Arg Asp Leu Leu Ile Asp Glu
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<211> 618

<212> DNA

<213> Mus musculus

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 gagtgcacaa gagggggctt ctgcaacttc atgcatttga agcccatctn cagagagcta 540
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<210> 552

<211> 277

<212> DNA

<213> Mus musculus

<400> 552

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<210> 553

<211> 966

<212> DNA

<213> Mus musculus

<400> 553

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<210> 554

<211> 427

<212> DNA

<213> Mus musculus

<400> 554

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<210> 555

<211> 307

<212> DNA

<213> Mus musculus

<400> 555

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<210> 556

<211> 466

<212> DNA

<213> Mus musculus

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<210> 557

<211> 552

<212> DNA

<213> Mus musculus

<400> 557

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<210> 558

<211> 337

<212> DNA

<213> Mus musculus

<400> 558

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<210> 559

<211> 987

<212> DNA

<213> Mus musculus

<400> 559

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<210> 560

<211> 446

<212> DNA

<213> *Mus musculus*

<400> 560

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<210> 561

<211> 379

<212> DNA

<213> *Mus musculus*

<400> 561

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<210> 562

<211> 503

<212> DNA

<213> Mus musculus

<400> 562

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<210> 563

<211> 501

<212> DNA

<213> Mus musculus

<400> 563

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caacatttct ctgacaacag ccgtgtatac acattagggt tatgatgta aaggccatca 480
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<210> 564

<211> 446

<212> DNA

<213> *Mus musculus*

<400> 564

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<210> 565

<211> 168

<212> DNA

<213> *Mus musculus*

<400> 565

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<210> 566

<211> 270

<212> DNA

<213> *Mus musculus*

<400> 566

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ggcagttatc aaagagaaga tcgaggagaa gaggggctgc ttcaatgttc agatggagcc 180
caaagtggtc acagatacag atgagactga acttgcaagg cagctggaac ggctggagag 240
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<210> 567

<211> 602

<212> DNA

<213> *Mus musculus*

<400> 567

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<210> 568

<211> 463

<212> DNA

<213> Mus musculus

<400> 568

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<210> 569

<211> 3396

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (49).. (1044)

<400> 569

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Leu Arg Arg Asn Ala Val Ile Gly Leu Asn Leu Tyr Cys Gly Gly Ala
 5 10 15
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 Ser Leu Gly Ala Gly Gly Gly Ser Pro Ala Gly Ala Arg Leu Val Ala
 20 25 30 35
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 Glu Glu Ala Lys Ala Arg Arg Glu Gly Gly Gly Glu Ala Ala Leu Leu
 40 45 50
 ccc ggc gcg cgg gtg gtc gcc cgg ccg ccg ccc gtg ggc gcc gag gac 249
 Pro Gly Ala Arg Val Val Ala Arg Pro Pro Pro Val Gly Ala Glu Asp
 55 60 65
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 Pro Asp Val Thr Ala Ser Ala Glu Arg Arg Leu His Lys Ser Pro Gly
 70 75 80
 ctc ctc gcc gtg ccg ccc gag gag atg gcc gcg tcg gcc gcc gcc gcc 345
 Leu Leu Ala Val Pro Pro Glu Glu Met Ala Ala Ser Ala Ala Ala Ala
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 atc gtg tct ccg gag gag gaa ctg gac ggc tgc gag ccg gag gcc atc 393
 Ile Val Ser Pro Glu Glu Glu Leu Asp Gly Cys Glu Pro Glu Ala Ile
 100 105 110 115
 ggc aag cgc ccg gcc gtg ctg ccc ctc ctg gag cgc gtg agc gag gcg 441
 Gly Lys Arg Pro Ala Val Leu Pro Leu Leu Glu Arg Val Ser Glu Ala
 120 125 130
 gcc aag agc tcc ggg gcc gac ggc tct ctg ccc tcc acg ccg ccg ccg 489
 Ala Lys Ser Ser Gly Ala Asp Gly Ser Leu Pro Ser Thr Pro Pro Pro
 135 140 145
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 Pro Glu Glu Glu Glu Asp Asp Leu Tyr Arg Gln Ser Leu Glu Ile Ile
 150 155 160

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 Ser Arg Val Met Val His Val Phe Lys Asp Gly Val Thr Asn Trp Gly
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 Arg Ile Val Thr Leu Ile Ser Phe Gly Ala Phe Val Ala Lys His Leu
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 295 300 305
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Ala Gly Leu Ala Tyr Leu Ile Arg			
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<210> 570

<211> 331

<212> PRT

<213> Mus musculus

<400> 570

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				20					25					30	
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				35					40					45	
Ala	Leu	Leu	Pro	Gly	Ala	Arg	Val	Val	Ala	Arg	Pro	Pro	Pro	Val	Gly
				50					55					60	

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 65 70 75 80
 Ser Pro Gly Leu Leu Ala Val Pro Pro Glu Glu Met Ala Ala Ser Ala
 85 90 95
 Ala Ala Ala Ile Val Ser Pro Glu Glu Glu Leu Asp Gly Cys Glu Pro
 100 105 110
 Glu Ala Ile Gly Lys Arg Pro Ala Val Leu Pro Leu Leu Glu Arg Val
 115 120 125
 Ser Glu Ala Ala Lys Ser Ser Gly Ala Asp Gly Ser Leu Pro Ser Thr
 130 135 140
 Pro Pro Pro Pro Glu Glu Glu Glu Asp Asp Leu Tyr Arg Gln Ser Leu
 145 150 155 160
 Glu Ile Ile Ser Arg Tyr Leu Arg Glu Gln Ala Thr Gly Ser Lys Asp
 165 170 175
 Ser Lys Pro Leu Gly Glu Ala Gly Ala Ala Gly Arg Arg Ala Leu Glu
 180 185 190
 Thr Leu Arg Arg Val Gly Asp Gly Val Gln Arg Asn His Glu Thr Ala
 195 200 205
 Phe Gln Gly Met Leu Arg Lys Leu Asp Ile Lys Asn Glu Gly Asp Val
 210 215 220
 Lys Ser Phe Ser Arg Val Met Val His Val Phe Lys Asp Gly Val Thr
 225 230 235 240
 Asn Trp Gly Arg Ile Val Thr Leu Ile Ser Phe Gly Ala Phe Val Ala
 245 250 255
 Lys His Leu Lys Ser Val Asn Gln Glu Ser Phe Ile Glu Pro Leu Ala
 260 265 270
 Glu Thr Ile Thr Asp Val Leu Val Arg Thr Lys Arg Asp Trp Leu Val
 275 280 285
 Lys Gln Arg Gly Trp Asp Gly Phe Val Glu Phe Phe His Val Gln Asp

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<210> 571

<211> 587

<212> DNA

<213> Mus musculus

<400> 571

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<210> 572

<211> 886

<212> DNA

<213> Mus musculus

<400> 572

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 aggccgtctg agaggggggc gtgggcgcgg cggggtcggc tcgctctcgt cggtggatca 840
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<210> 573

<211> 611

<212> DNA

<213> Mus musculus

<400> 573

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<210> 574

<211> 580

<212> DNA

<213> Mus musculus

<400> 574

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<210> 575

<211> 625

<212> DNA

<213> Mus musculus

<400> 575

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<210> 576

<211> 490

<212> DNA

<213> *Mus musculus*

<400> 576

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<210> 577

<211> 468

<212> DNA

<213> Mus musculus

<400> 577

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<210> 578

<211> 565

<212> DNA

<213> Mus musculus

<400> 578

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<210> 579

<211> 523

<212> DNA

<213> *Mus musculus*

<400> 579

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gtgaatgtcc tggatgcgca ggaggagatg aaggaagtag ccagacaccc caagaatcct 180
gatgttgggt tgaagccgtg gtggtacagt cccaagggtt tcatagaagg ggccgatgca 240
gagactttct cagaggggtga gatggtcaca ttataaaact gcggcaacat caacattact 300
aaaatacacc aaaatgccgg atggaagaat tacatctcta gatgcaaatt gaatttggag 360
aacaagact acaagaacag taccaagatc acttggcttg cttaggcaca cagcctctcc 420
gaatccagcc gtccgattca cttaatgggca ctttgtcagc aagcattgct gggacaagat 480
agggcttcaa gcagtacttc acaaggccgt aagctgagga cta 523

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<210> 580

<211> 289

<212> DNA

<213> *Mus musculus*

<400> 580

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tcggcgccctg cgtactaaga cccgtgtgca gcagcggcgg cggcgctaga ggcgcgcgcg 60
gcggcgcgcg cacacgagta gcgggttcgg aggcagcagt tgggctcgcg gcgagggacc 120
aggtaagtc agtcggttcg ccgagttgga atcggagctc cttaaattggc agatgatttg 180
gacttcgaga caggagaatc aggggcctca gccaaattcc caatgcagtg ctcagcatta 240
cgtaagaaat ggttttgggt gtgctcaaaa ggccggccaa tgtaagatc 289

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<210> 581

<211> 1928

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (134).. (1108)

<400> 581

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ttcccttgaa ggcagcagcg gaggcggcgg ctgctccaga caccigcggc ggcgaccccc 120
cggcggcgcg gag atg tgg ccc tgg gcg gcg gcg ctg ttg ctg ggc tcc 169
Met Trp Pro Leu Ala Ala Ala Leu Leu Leu Gly Ser
      1             5             10
tgc tgc tgc ggt tca gct caa cta ctg ttt agt aac gtc aac tcc ata 217
Cys Cys Cys Gly Ser Ala Gln Leu Leu Phe Ser Asn Val Asn Ser Ile
      15             20             25
gag ttc act tca tgc aat gaa act gtg gtc atc cct tgc atc gtc cgt 265
Glu Phe Thr Ser Cys Asn Glu Thr Val Val Ile Pro Cys Ile Val Arg
      30             35             40
aat gtg gag gcg caa agc acc gaa gaa atg ttt gtg aag tgg aag ttg 313
Asn Val Glu Ala Gln Ser Thr Glu Glu Met Phe Val Lys Trp Lys Leu
      45             50             55             60
aac aaa tcg tat att ttc atc tat gat gga aat aaa aat agc act act 361
Asn Lys Ser Tyr Ile Phe Ile Tyr Asp Gly Asn Lys Asn Ser Thr Thr
      65             70             75
aca gat caa aac ttt acc agt gca aaa atc tca gtc tca gac tta atc 409
Thr Asp Gln Asn Phe Thr Ser Ala Lys Ile Ser Val Ser Asp Leu Ile

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80	85	90	
aat ggc att gcc tct ttg aaa atg gat aag cgc gat gcc atg gtg gga	457		
Asn Gly Ile Ala Ser Leu Lys Met Asp Lys Arg Asp Ala Met Val Gly			
95	100	105	
aac tac act tgc gaa gtg aca gag tta tcc aga gaa ggc aaa aca gtt	505		
Asn Tyr Thr Cys Glu Val Thr Glu Leu Ser Arg Glu Gly Lys Thr Val			
110	115	120	
ata gag ctg aaa aac cgc acg gcc ttc aac act gac caa gga tca gcc	553		
Ile Glu Leu Lys Asn Arg Thr Ala Phe Asn Thr Asp Gln Gly Ser Ala			
125	130	135	140
tgt tct tac gag gag gag aaa gga ggt tgc aaa tta gtt tcg tgg ttt	601		
Cys Ser Tyr Glu Glu Glu Lys Gly Gly Cys Lys Leu Val Ser Trp Phe			
145	150	155	
tct cca aat gaa aag atc ctc att gtt att ttc cca att ttg gct ata	649		
Ser Pro Asn Glu Lys Ile Leu Ile Val Ile Phe Pro Ile Leu Ala Ile			
160	165	170	
ctc ctg ttc tgg gga aag ttt ggt att tta aca ctc aaa tat aaa tcc	697		
Leu Leu Phe Trp Gly Lys Phe Gly Ile Leu Thr Leu Lys Tyr Lys Ser			
175	180	185	
agc cat acg aat aag aga atc att ctg ctg ctc gtt gcc ggg ctg gtg	745		
Ser His Thr Asn Lys Arg Ile Ile Leu Leu Leu Val Ala Gly Leu Val			
190	195	200	
ctc aca gtc atc gtg gtt gtt gga gcc atc ctt ctc atc cca gga gaa	793		
Leu Thr Val Ile Val Val Val Gly Ala Ile Leu Leu Ile Pro Gly Glu			
205	210	215	220
aag ccc gtg aag aat gct tct gga ctt ggc ctc att gta atc tct acg	841		
Lys Pro Val Lys Asn Ala Ser Gly Leu Gly Leu Ile Val Ile Ser Thr			
225	230	235	
ggg ata tta ata cta ctt cag tac aat gtg ttt atg aca gct ttt gga	889		

Gly Ile Leu Ile Leu Leu Gln Tyr Asn Val Phe Met Thr Ala Phe Gly
 240 245 250
 atg acc tct ttc acc att gcc ata ttg atc act caa gtg ctg ggc tac 937
 Met Thr Ser Phe Thr Ile Ala Ile Leu Ile Thr Gln Val Leu Gly Tyr
 255 260 265
 gtc ctt gct ttg gtc ggg ctg tgt ctc tgc atc atg gca tgt gag cca 985
 Val Leu Ala Leu Val Gly Leu Cys Leu Cys Ile Met Ala Cys Glu Pro
 270 275 280
 gtg cac ggc ccc ctt ttg att tca ggt ttg ggg atc ata gct cta gca 1033
 Val His Gly Pro Leu Leu Ile Ser Gly Leu Gly Ile Ile Ala Leu Ala
 285 290 295 300
 gaa cta ctt gga tta gtt tat atg aag ttt gtc gct tcc aac cag agg 1081
 Glu Leu Leu Gly Leu Val Tyr Met Lys Phe Val Ala Ser Asn Gln Arg
 305 310 315
 act atc caa cct cct agg aat agg tga agggaagtga cggactgtaa 1128
 Thr Ile Gln Pro Pro Arg Asn Arg
 320 325
 ctiggaagtc agaaatggaa gaatacagtt gtctaagcac caggtcttca cgactcacag 1188
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 gggcaacttc caagaatgat gcttgttaga tcctagagtc tctgaacact gagttttaa 1428
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 gaaaaacgaa tgtggttggg caaatcccggt gtggcccctc tgtgtgctat gatattgatg 1668
 gcactgggtgt cttcattctt gggggttgcc atcattcaca cacaccctt tgacatacag 1728
 tgcaccccag ttttgaatac attttttttg caccctgtcc cgttctgcta ctttgatttg 1788
 cgttatgata tatatatata tatataatac cttttctcct ctttaaacat ggtcctgtga 1848

cacaatagtc agttgcagaa aggagccaga cttattcgca aagcactgtg ctcaaactct 1908
 tcagaaaaaa aaaaaaaaaa 1928

<210> 582

<211> 324

<212> PRT

<213> Mus musculus

<400> 582

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 20 25 30
 Cys Asn Glu Thr Val Val Ile Pro Cys Ile Val Arg Asn Val Glu Ala
 35 40 45
 Gln Ser Thr Glu Glu Met Phe Val Lys Trp Lys Leu Asn Lys Ser Tyr
 50 55 60
 Ile Phe Ile Tyr Asp Gly Asn Lys Asn Ser Thr Thr Thr Asp Gln Asn
 65 70 75 80
 Phe Thr Ser Ala Lys Ile Ser Val Ser Asp Leu Ile Asn Gly Ile Ala
 85 90 95
 Ser Leu Lys Met Asp Lys Arg Asp Ala Met Val Gly Asn Tyr Thr Cys
 100 105 110
 Glu Val Thr Glu Leu Ser Arg Glu Gly Lys Thr Val Ile Glu Leu Lys
 115 120 125
 Asn Arg Thr Ala Phe Asn Thr Asp Gln Gly Ser Ala Cys Ser Tyr Glu
 130 135 140
 Glu Glu Lys Gly Gly Cys Lys Leu Val Ser Trp Phe Ser Pro Asn Glu
 145 150 155 160

Lys Ile Leu Ile Val Ile Phe Pro Ile Leu Ala Ile Leu Leu Phe Trp
 165 170 175
 Gly Lys Phe Gly Ile Leu Thr Leu Lys Tyr Lys Ser Ser His Thr Asn
 180 185 190
 Lys Arg Ile Ile Leu Leu Leu Val Ala Gly Leu Val Leu Thr Val Ile
 195 200 205
 Val Val Val Gly Ala Ile Leu Leu Ile Pro Gly Glu Lys Pro Val Lys
 210 215 220
 Asn Ala Ser Gly Leu Gly Leu Ile Val Ile Ser Thr Gly Ile Leu Ile
 225 230 235 240
 Leu Leu Gln Tyr Asn Val Phe Met Thr Ala Phe Gly Met Thr Ser Phe
 245 250 255
 Thr Ile Ala Ile Leu Ile Thr Gln Val Leu Gly Tyr Val Leu Ala Leu
 260 265 270
 Val Gly Leu Cys Leu Cys Ile Met Ala Cys Glu Pro Val His Gly Pro
 275 280 285
 Leu Leu Ile Ser Gly Leu Gly Ile Ile Ala Leu Ala Glu Leu Leu Gly
 290 295 300
 Leu Val Tyr Met Lys Phe Val Ala Ser Asn Gln Arg Thr Ile Gln Pro
 305 310 315 320
 Pro Arg Asn Arg

<210> 583

<211> 826

<212> DNA

<213> Mus musculus

<400> 583

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ggactactgt accagaatga aggaaaacca gaagcacatc tattttatca caggtgagac 120
 caaggaccag gttgctaact cgcctttgt ggaacgtctc cgaaagcatg gcttagaagt 180
 aatttataig attgagccca ttgatgagta ttgtgtgcaa cagctgaagg aatttgaggg 240
 caagaccttg gtgtctgtta ccaaagaagg actggaactt ccagaagatg aagaggaaaa 300
 gaagaaacag gaagagaaaa agacaaaatt tgagaacctc tgcaaaatta tgaaggatat 360
 ttgggagaag aaggttgaaa aggtggttgt gtcaaaccga ctggtgacat ccccgctgtg 420
 tattgtcaca agcacatatg gttggacagc aaacatggag agaatcatga aagctcaagc 480
 cctcagagac aactcaacaa tgggttiacat ggcagcaaag aaacacctgg agataaatcc 540
 tgatcactcc attattgaaa ccttaaggca aaaggcagag gctgacaaga atgacaaatc 600
 tgtgaaggat ctggctatct tgcgtgtaiga aactgcactc ctatcttctg gcttcagtct 660
 ggaagatccc cagacccatg ctaacaggat ctacaggatg atcaagcttg gtctaggtat 720
 tgatgaggat gatcctactg tggatgacac cagtgtgtgt gtaactgaag aaatgcctcc 780
 cctggaagga gatgacgaca catcacgcat ggaagaagta gactaa 826

<210> 584

<211> 1595

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (194).. (1051)

<400> 584

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 cgcgtgcct tctgcggcga gtagggcctc gcggcgcat cggcggcgag tagccgctgc 180
 ggcttgccg acc atg tcg gac gcg gct gag gag cag ccc atg gag acg 229

Met Ser Asp Ala Ala Glu Glu Gln Pro Met Glu Thr

1	5	10	
acg ggc gcc acc gag aac gga cac gag gcc gcc ccc gaa ggc gag gcc	277		
Thr Gly Ala Thr Glu Asn Gly His Glu Ala Ala Pro Glu Gly Glu Ala			
15	20	25	
ccg gtc gag ccc agc gcg gct gcc gcg gcc ccc gcg gcc tcg gcc ggg	325		
Pro Val Glu Pro Ser Ala Ala Ala Ala Ala Pro Ala Ala Ser Ala Gly			
30	35	40	
tct ggg ggc ggg acc acg acc gca ccg agc ggg aac cag aac ggc gcg	373		
Ser Gly Gly Gly Thr Thr Thr Ala Pro Ser Gly Asn Gln Asn Gly Ala			
45	50	55	60
gag ggc gac cag atc aac gcc agc aag aac gag gag gac gcg gga aaa	421		
Glu Gly Asp Gln Ile Asn Ala Ser Lys Asn Glu Glu Asp Ala Gly Lys			
65	70	75	
atg ttc gtt ggt ggt ctg agc tgg gat acc agc aaa aaa gac tta aag	469		
Met Phe Val Gly Gly Leu Ser Trp Asp Thr Ser Lys Lys Asp Leu Lys			
80	85	90	
gat tat ttt act aag ttt gga gag gtt gtt gac tgt aca ata aaa atg	517		
Asp Tyr Phe Thr Lys Phe Gly Glu Val Val Asp Cys Thr Ile Lys Met			
95	100	105	
gat ccc aac act gga cga tca aga ggg ttt ggg ttt att ctc ttc aaa	565		
Asp Pro Asn Thr Gly Arg Ser Arg Gly Phe Gly Phe Ile Leu Phe Lys			
110	115	120	
gat tct tct agt gtg gaa aag gtc tta gat cag aag gag cac agg ctg	613		
Asp Ser Ser Ser Val Glu Lys Val Leu Asp Gln Lys Glu His Arg Leu			
125	130	135	140
gat ggt cgt gtc att gac cct aaa aag gct atg gct atg aag aag gac	661		
Asp Gly Arg Val Ile Asp Pro Lys Lys Ala Met Ala Met Lys Lys Asp			
145	150	155	
cct gtg aag aaa atc ttt gtg gga ggt cta aac cct gaa gcc aca gag	709		

Pro Val Lys Lys Ile Phe Val Gly Gly Leu Asn Pro Glu Ala Thr Glu
 160 165 170
 gaa aag atc aga gaa tac ttc ggc cag ttt ggg gag att gag gcc att 757
 Glu Lys Ile Arg Glu Tyr Phe Gly Gln Phe Gly Glu Ile Glu Ala Ile
 175 180 185
 gag ctt cca ata gat ccc aag ttg aac aaa aga cgg ggt ttt gtt ttt 805
 Glu Leu Pro Ile Asp Pro Lys Leu Asn Lys Arg Arg Gly Phe Val Phe
 190 195 200
 att aca ttt aaa gag gaa gat cct gtg aag aaa gtt ctg gag aag aaa 853
 Ile Thr Phe Lys Glu Glu Asp Pro Val Lys Lys Val Leu Glu Lys Lys
 205 210 215 220
 ttt cat act gtc agt gga agc aag tgt gaa atc aag gtt gcc cag ccc 901
 Phe His Thr Val Ser Gly Ser Lys Cys Glu Ile Lys Val Ala Gln Pro
 225 230 235
 aaa gag gtg tat cag caa cag cag tat ggc tct ggg ggc aga gga aat 949
 Lys Glu Val Tyr Gln Gln Gln Gln Tyr Gly Ser Gly Gly Arg Gly Asn
 240 245 250
 cgc aat cga ggg aac cga ggc agt ggt gga ggt cag ggt agt aca aat 997
 Arg Asn Arg Gly Asn Arg Gly Ser Gly Gly Gly Gln Gly Ser Thr Asn
 255 260 265
 tac gga aag agc cag cga cgt ggt ggt cat cag aat aac tac aag cca 1045
 Tyr Gly Lys Ser Gln Arg Arg Gly Gly His Gln Asn Asn Tyr Lys Pro
 270 275 280
 tac tga gaggcagcag gacggccga gtgacgaccg cacacgcitt gtttggacgc 1101
 Tyr
 285
 ggagtgaaca caattatgta ccaaatttaa ctiggcaaac ttttatggcc tgtcccatgt 1161
 gcatcttatt taaaatttcc cccagaaatc actctcctgt ttactattcc agagctctag 1221
 ttgtaggcag cgtgtggcgt ctgagaggcc agagcggcac tagggggctg attttattac 1281

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<210> 585

<211> 285

<212> PRT

<213> Mus musculus

<400> 585

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			20					25					30		
Ser	Ala	Ala	Ala	Ala	Ala	Pro	Ala	Ala	Ser	Ala	Gly	Ser	Gly	Gly	Gly
		35				40					45				
Thr	Thr	Thr	Ala	Pro	Ser	Gly	Asn	Gln	Asn	Gly	Ala	Glu	Gly	Asp	Gln
		50				55					60				
Ile	Asn	Ala	Ser	Lys	Asn	Glu	Glu	Asp	Ala	Gly	Lys	Met	Phe	Val	Gly
	65				70					75				80	
Gly	Leu	Ser	Trp	Asp	Thr	Ser	Lys	Lys	Asp	Leu	Lys	Asp	Tyr	Phe	Thr
			85					90					95		
Lys	Phe	Gly	Glu	Val	Val	Asp	Cys	Thr	Ile	Lys	Met	Asp	Pro	Asn	Thr
		100						105					110		
Gly	Arg	Ser	Arg	Gly	Phe	Gly	Phe	Ile	Leu	Phe	Lys	Asp	Ser	Ser	Ser
		115						120					125		

Val Glu Lys Val Leu Asp Gln Lys Glu His Arg Leu Asp Gly Arg Val
 130 135 140
 Ile Asp Pro Lys Lys Ala Met Ala Met Lys Lys Asp Pro Val Lys Lys
 145 150 155 160
 Ile Phe Val Gly Gly Leu Asn Pro Glu Ala Thr Glu Glu Lys Ile Arg
 165 170 175
 Glu Tyr Phe Gly Gln Phe Gly Glu Ile Glu Ala Ile Glu Leu Pro Ile
 180 185 190
 Asp Pro Lys Leu Asn Lys Arg Arg Gly Phe Val Phe Ile Thr Phe Lys
 195 200 205
 Glu Glu Asp Pro Val Lys Lys Val Leu Glu Lys Lys Phe His Thr Val
 210 215 220
 Ser Gly Ser Lys Cys Glu Ile Lys Val Ala Gln Pro Lys Glu Val Tyr
 225 230 235 240
 Gln Gln Gln Gln Tyr Gly Ser Gly Gly Arg Gly Asn Arg Asn Arg Gly
 245 250 255
 Asn Arg Gly Ser Gly Gly Gly Gln Gly Ser Thr Asn Tyr Gly Lys Ser
 260 265 270
 Gln Arg Arg Gly Gly His Gln Asn Asn Tyr Lys Pro Tyr
 275 280 285

<210> 586

<211> 2257

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (49).. (318)

<220>

<221> CDS

<222> (656).. (1363)

<400> 586

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                                                    1
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Trp Gly Val Glu Ala Gly Thr Ser Leu Gly Ser Gln Ser Leu Ala Gly
      5              10              15
ctt gtc gat cac act ctg ggc ttt ggt ctt aag cgt ctc cag cat ggg  153
Leu Val Asp His Thr Leu Gly Phe Gly Leu Lys Arg Leu Gln His Gly
      20              25              30              35
cat cag act atg gcg cag gtc ctc cag cgc agg tct ggc ttt ctc gcc  201
His Gln Thr Met Ala Gln Val Leu Gln Arg Arg Ser Gly Phe Leu Ala
              40              45              50
aag tgt ctt cag gtg ggt ttt ggc cct ggt gtg gta ctc gtt caa ggt  249
Lys Cys Leu Gln Val Gly Phe Gly Pro Gly Val Val Leu Val Gln Gly
              55              60              65
agg gtt gct ctt gag ctc agc cag gcg ctg ggc cag gct ctc gcg cat  297
Arg Val Ala Leu Glu Leu Ser Gln Ala Leu Gly Gln Ala Leu Ala His
              70              75              80
ctg ttc gct gtg ggg cgc tag ctgtgtgcgc agagagtcta cgtgtgtgcg  348
Leu Phe Ala Val Gly Arg
      85              90
catgcggtcg cgaaattcct cagccacagg ggacagtcct ccttcagct cctgcagctt 408
ctggcgcgcg ctctcctgca gctcggcgcc cagaggcgcc accttctggc ggtagagctc 468

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cagtcctcatt taggcatgta gtgcatacac atacatgcaa gcaaaacact cataaactac 528
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 Met Asn Tyr Lys Ile Tyr Lys Lys Ala Lys Lys Thr Ile Cys
 95 100
 caa aac agt ttt gga aat gaa gaa aag aaa aaa gag cct gca att tca 745
 Gln Asn Ser Phe Gly Asn Glu Glu Lys Lys Lys Glu Pro Ala Ile Ser
 105 110 115 120
 tca cag aat agc cct gaa gca aga gaa gaa agt agt tcc agc agc aat 793
 Ser Gln Asn Ser Pro Glu Ala Arg Glu Glu Ser Ser Ser Ser Ser Asn
 125 130 135
 gia agc agc aga aag gat gag aca aat gct cga gat aca tat gtt tca 841
 Val Ser Ser Arg Lys Asp Glu Thr Asn Ala Arg Asp Thr Tyr Val Ser
 140 145 150
 tct ttt cct cgg gca cca agc act tct gat tct gtg cga tta aaa tgt 889
 Ser Phe Pro Arg Ala Pro Ser Thr Ser Asp Ser Val Arg Leu Lys Cys
 155 160 165
 agg gag atg ctt gct gca gct ctt cgg aca gga gat gat tat gtt gca 937
 Arg Glu Met Leu Ala Ala Ala Leu Arg Thr Gly Asp Asp Tyr Val Ala
 170 175 180
 att gga gct gat gaa gaa gaa ctg gga tct cag att gag gaa gct ata 985
 Ile Gly Ala Asp Glu Glu Glu Leu Gly Ser Gln Ile Glu Glu Ala Ile
 185 190 195 200
 tat caa gaa ata agg aat aca gac atg aaa tac aaa aac aga gta cga 1033
 Tyr Gln Glu Ile Arg Asn Thr Asp Met Lys Tyr Lys Asn Arg Val Arg
 205 210 215
 agt agg ata tca aat ctt aaa gat gca aag aat cca aat tta agg aaa 1081
 Ser Arg Ile Ser Asn Leu Lys Asp Ala Lys Asn Pro Asn Leu Arg Lys

220	225	230	
aat gtg ctg tgt ggg aat att cct cct gat cta ttt gct aga atg aca	1129		
Asn Val Leu Cys Gly Asn Ile Pro Pro Asp Leu Phe Ala Arg Met Thr			
235	240	245	
gca gag gaa atg gct agt gat gag ctc aaa gag atg agg aaa aac ctg	1177		
Ala Glu Glu Met Ala Ser Asp Glu Leu Lys Glu Met Arg Lys Asn Leu			
250	255	260	
acc aaa gaa gcc atc agg gag cat cag atg gcc aag act ggt ggg acc	1225		
Thr Lys Glu Ala Ile Arg Glu His Gln Met Ala Lys Thr Gly Gly Thr			
265	270	275	280
cag act gac ttg ttc act tgt ggc aaa tgt aaa aag aag aac tgc act	1273		
Gln Thr Asp Leu Phe Thr Cys Gly Lys Cys Lys Lys Lys Asn Cys Thr			
285	290	295	
tat aca cag gtg caa act cgt agt gct gat gaa cca atg aca aca ttt	1321		
Tyr Thr Gln Val Gln Thr Arg Ser Ala Asp Glu Pro Met Thr Thr Phe			
300	305	310	
gtt gta tgt aat gaa tgt gga aat cgg tgg aag ttc tgt tga	1363		
Val Val Cys Asn Glu Cys Gly Asn Arg Trp Lys Phe Cys			
315	320	325	
gtttggaaga attggcaaag tatctggacc attaagaaaa actaattttg taattagctt	1423		
taaaattaag ccaggcaact cgtttccttg caagtgaat ttgtaaacaa catacatctc	1483		
atgggttggt ctttgttgtt cacctgacag tctgtcttaa atgccttctg tggctcaga	1543		
tcagctggga gaccataaaa taatgatata atgtgttgct ttgtttttct ctttcataag	1603		
ttgatgttgc attttattaa atattaactt tttatagcct agaacacaaa aattttgttg	1663		
atcigttaat gcataaagat aaattgcttt tctcattggg atgtacctaa acatgttaaa	1723		
aggaaaaggc ataataataa tttttagagt taccaaagt agtgtgtatt ccaatagtat	1783		
gtggccagct tatcaaagtt gtgcacacaa ttgaactag catattactt tactcttaat	1843		
tactgtgctc acaaagccic ggatccttgg atctcttgca tctgtgacta accacagtga	1903		
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acggacttgg tttattttat ttgactttgt gctatatattt agttttatag aactcigtta 2023
 taatttccta agcttttcat nnagcccacc acaggtatac ttctgatgaa ttgtcccca 2083
 taggaagaca tgctatgaag aaaatgtag tatcttagta gagttcctgg aggcagcatg 2143
 actgtacttg cacttggaaa cctactgacc aaggattaag cctgagaact gtgtaaatca 2203
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<210> 587

<211> 89

<212> PRT

<213> Mus musculus

<400> 587

Met	Arg	Gly	Trp	Gly	Val	Glu	Ala	Gly	Thr	Ser	Leu	Gly	Ser	Gln	Ser
1				5					10					15	
Leu	Ala	Gly	Leu	Val	Asp	His	Thr	Leu	Gly	Phe	Gly	Leu	Lys	Arg	Leu
				20					25					30	
Gln	His	Gly	His	Gln	Thr	Met	Ala	Gln	Val	Leu	Gln	Arg	Arg	Ser	Gly
				35					40					45	
Phe	Leu	Ala	Lys	Cys	Leu	Gln	Val	Gly	Phe	Gly	Pro	Gly	Val	Val	Leu
				50					55					60	
Val	Gln	Gly	Arg	Val	Ala	Leu	Glu	Leu	Ser	Gln	Ala	Leu	Gly	Gln	Ala
				65					70					75	
Leu	Ala	His	Leu	Phe	Ala	Val	Gly	Arg							
															85

<210> 588

<211> 235

<212> PRT

<213> Mus musculus

<400> 588

Met Asn Tyr Lys Ile Tyr Lys Lys Ala Lys Lys Thr Ile Cys Gln Asn
 1 5 10 15
 Ser Phe Gly Asn Glu Glu Lys Lys Lys Glu Pro Ala Ile Ser Ser Gln
 20 25 30
 Asn Ser Pro Glu Ala Arg Glu Glu Ser Ser Ser Ser Ser Asn Val Ser
 35 40 45
 Ser Arg Lys Asp Glu Thr Asn Ala Arg Asp Thr Tyr Val Ser Ser Phe
 50 55 60
 Pro Arg Ala Pro Ser Thr Ser Asp Ser Val Arg Leu Lys Cys Arg Glu
 65 70 75 80
 Met Leu Ala Ala Ala Leu Arg Thr Gly Asp Asp Tyr Val Ala Ile Gly
 85 90 95
 Ala Asp Glu Glu Glu Leu Gly Ser Gln Ile Glu Glu Ala Ile Tyr Gln
 100 105 110
 Glu Ile Arg Asn Thr Asp Met Lys Tyr Lys Asn Arg Val Arg Ser Arg
 115 120 125
 Ile Ser Asn Leu Lys Asp Ala Lys Asn Pro Asn Leu Arg Lys Asn Val
 130 135 140
 Leu Cys Gly Asn Ile Pro Pro Asp Leu Phe Ala Arg Met Thr Ala Glu
 145 150 155 160
 Glu Met Ala Ser Asp Glu Leu Lys Glu Met Arg Lys Asn Leu Thr Lys
 165 170 175
 Glu Ala Ile Arg Glu His Gln Met Ala Lys Thr Gly Gly Thr Gln Thr
 180 185 190
 Asp Leu Phe Thr Cys Gly Lys Cys Lys Lys Lys Asn Cys Thr Tyr Thr
 195 200 205
 Gln Val Gln Thr Arg Ser Ala Asp Glu Pro Met Thr Thr Phe Val Val

210 215 220
 Cys Asn Glu Cys Gly Asn Arg Trp Lys Phe Cys
 225 230 235

<210> 589

<211> 1371

<212> DNA

<213> Mus musculus

<400> 589

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 cgaacctgaa gacctggagg acctgtacag ccgctacaag aagctgcagc aggagctgga 180
 gttcctggag gtncaggagg agtatatcaa ggacgagcag aagaacctga agaaggaatt 240
 cctccacgcc caggaggagg tgaagcggat ccagagcatt cccttgggtca tcggctcagtt 300
 cttaggaagct gtggatcaga acacagccat cgtggcctcc accacaggct ctaactatta 360
 tgtgcgcatg gtgagtacca tcgaccggga gctgctcaag cccaacgcct cgggtggccct 420
 gcacaagcac agcaatgccc tgggtggacgt gctgcctccc gcggccgaca gcagcatcat 480
 gatgctcacc tcagaccaga agccagatgt gatgtatgcc gatattggag gcatggacat 540
 ccagaagcag gaggtgaggg aggcctgtgga actcccgctt acacacttcg agctgtacaa 600
 gcagattggc atcgatcctc cccgaggigt cctcatgtat ggccctcctg gctgttgaaa 660
 gacaatgtta gcaaaggctg tggcacatca cagcacagct gcatttatcc gtgtggtggg 720
 ctcgagattt gttcagaagt acctgggtga gggcccccg atggtccggg atgtgttccg 780
 cctagctaag gagaatgcac cigccatcat ctcatagat gaaattgatg ccattgccac 840
 caagagattc gatgccaga caggagctga cagggaggtt cagaggatcc tgctggagct 900
 actgaatcaa atggatggat ttgaccagaa cgtcaatgtg aaggtaatca tggccacaaa 960
 cagagcagac accttggatc cagctctact gcggccagga cgccctggacc gaaaaattga 1020
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 gaacctctct gaggaggctg acctggaaga ctaigtggcc cgtccagata agatttcagg 1140

agccgatatc aactccatct gtcaggcgcg tggaaatgttg gctgtccgtg agaccgccta 1200
 catigticctg gccaaggact tcgagaaagc atacaagacc gtgatcaaga aagatgaaca 1260
 ggaacatgaa ttttacaagt gacccctccc cacacttccc caggcacctg tcccaaaggc 1320
 tagttttctc tttaccagg attggittag tcaataaatg gacgtgattg g 1371

<210> 590

<211> 540

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (19).. (333)

<400> 590

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 Met Lys Ser Leu Leu Pro Leu Ala Ile Leu Ala
 1 5 10
 gcg ctg gcc gtg gca acc ctg tgc tac gaa tct cac gaa agc atg gag 99
 Ala Leu Ala Val Ala Thr Leu Cys Tyr Glu Ser His Glu Ser Met Glu
 15 20 25
 tcc tat gaa atc agt ccc ttc atc aac agg aga aat gcc aac acc ttt 147
 Ser Tyr Glu Ile Ser Pro Phe Ile Asn Arg Arg Asn Ala Asn Thr Phe
 30 35 40
 atg tcc cct cag cag agg tgg cga gct aaa gcc caa aag aga gtc cag 195
 Met Ser Pro Gln Gln Arg Trp Arg Ala Lys Ala Gln Lys Arg Val Gln
 45 50 55
 gaa cgc aac aag cct gcc tac gag atc aac aga gag gcc tgc gat gac 243
 Glu Arg Asn Lys Pro Ala Tyr Glu Ile Asn Arg Glu Ala Cys Asp Asp

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60          65          70          75
tac aag ctg tgt gag cgc tac gcc atg gtc tac ggc tac aac gct gcc 291
Tyr Lys Leu Cys Glu Arg Tyr Ala Met Val Tyr Gly Tyr Asn Ala Ala

          80          85          90
tac aac cgc tac ttc agg cag cgc cga gga gcc aaa tat tag 333
Tyr Asn Arg Tyr Phe Arg Gln Arg Arg Gly Ala Lys Tyr

          95          100          105
cgcgaaagaaa cagtcatttg gttgtggagt ttctgttttat atctcctgca gtagcattac 393
tgaagtatac agacacgcat ggtgtgcttg ctctttacat gatctcctag ctggctggcc 453
cactcccttcc ttctgcgggt tgaagtaat gaaagaacag tattaagaag tgtgtttata 513
tataataaaa ttctggcttg atacgtt 540

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<210> 591

<211> 104

<212> PRT

<213> Mus musculus

<400> 591

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Met Lys Ser Leu Leu Pro Leu Ala Ile Leu Ala Ala Leu Ala Val Ala
  1          5          10          15
Thr Leu Cys Tyr Glu Ser His Glu Ser Met Glu Ser Tyr Glu Ile Ser
          20          25          30
Pro Phe Ile Asn Arg Arg Asn Ala Asn Thr Phe Met Ser Pro Gln Gln
          35          40          45
Arg Trp Arg Ala Lys Ala Gln Lys Arg Val Gln Glu Arg Asn Lys Pro
          50          55          60
Ala Tyr Glu Ile Asn Arg Glu Ala Cys Asp Asp Tyr Lys Leu Cys Glu
          65          70          75          80
Arg Tyr Ala Met Val Tyr Gly Tyr Asn Ala Ala Tyr Asn Arg Tyr Phe

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85

90

95

Arg Gln Arg Arg Gly Ala Lys Tyr

100

<210> 592

<211> 746

<212> DNA

<213> Mus musculus

<400> 592

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 gaaccttagt tcnccgcgcg gcgccatttc cactccgaca agatgaaaga aacaatcatg 120
 aaccaggaga aactcgccaa actgcaggca caagtgcgca ttggtgggaa aggaactgct 180
 cgtaggaaga agaaggtggt tcacagaacg gccacagcag acgataagaa actgcagttc 240
 tccttaaaga agttaggggt gaacaacatc tctgggtattg aagaggigaa catgtttaca 300
 aaccaaggaa cagtgateca ttttaacaac cctaaagttc aggcattcct ggcagcaaac 360
 acctcacca ttaacaggcca cgctgagaca aagcagctga cagaaatgct tcccagcatc 420
 ctcaaccagc ttggtgcaga cagcctgact agtttaagga gactgggctg acgtctgccn 480
 aacaaatctg tggatgaaac gacgccttgc actgagagat gatgatgatg agtttagatc 540
 tgggtgagat ttgatgaggt tgtaagatga ngaagtgaat gaacgcgtgt cgagagcgat 600
 cntgagaatt cagagictna ttaacatgct gttagatatt ttgttatatg tctgtaatct 660
 gictatatit agccagccgc catgagcatt aggtcgaacc atnctctcgc attacgaacc 720
 ctggaattga gagttaactt cggatga 746

<210> 593

<211> 1812

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (53).. (1723)

<400> 593

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Met Glu

1

ggt cct ttg tcc gtg ttc ggg gac cgc agc act ggg gag gcg atc cgc 106

Gly Pro Leu Ser Val Phe Gly Asp Arg Ser Thr Gly Glu Ala Ile Arg

5

10

15

tcc cag aat gtt atg gct gca gct tct att gcc aac att gtt aaa agt 154

Ser Gln Asn Val Met Ala Ala Ala Ser Ile Ala Asn Ile Val Lys Ser

20

25

30

tct ctt ggg cca gtt ggc ttg gat aaa atg ttg gtg gat gat att ggt 202

Ser Leu Gly Pro Val Gly Leu Asp Lys Met Leu Val Asp Asp Ile Gly

35

40

45

50

gat gta acc att act aac gat ggt gcc acc atc ctg aag tta ctg gag 250

Asp Val Thr Ile Thr Asn Asp Gly Ala Thr Ile Leu Lys Leu Leu Glu

55

60

65

gta gaa cat ccc gca gcc aaa gtt ctg tgt gag ttg gct gac ctg caa 298

Val Glu His Pro Ala Ala Lys Val Leu Cys Glu Leu Ala Asp Leu Gln

70

75

80

gac aaa gaa gtt gga gat gga act acc tca gtg gta atc att gca gcg 346

Asp Lys Glu Val Gly Asp Gly Thr Thr Ser Val Val Ile Ile Ala Ala

85

90

95

gag ctt ctg aaa aat gca gat gag cta gtc aaa cag aaa att cat cca 394

Glu Leu Leu Lys Asn Ala Asp Glu Leu Val Lys Gln Lys Ile His Pro

100

105

110

aca tca gtt att agt ggc tat cgt ctt gcc tgc aag gaa gcg gtg cgt 442
 Thr Ser Val Ile Ser Gly Tyr Arg Leu Ala Cys Lys Glu Ala Val Arg
 115 120 125 130
 tat atc aat gag aac ctg att att aac gca gac gaa ctt gga aga gac 490
 Tyr Ile Asn Glu Asn Leu Ile Ile Asn Ala Asp Glu Leu Gly Arg Asp
 135 140 145
 tgt ctg acc aat act gct aag aca tcc atg tct tcc aaa att att gga 538
 Cys Leu Thr Asn Thr Ala Lys Thr Ser Met Ser Ser Lys Ile Ile Gly
 150 155 160
 ata aat ggt gat tac ttt gct aat atg gta gta gat gct gtg ctt gct 586
 Ile Asn Gly Asp Tyr Phe Ala Asn Met Val Val Asp Ala Val Leu Ala
 165 170 175
 gtt aaa tac aca gat gcc aga ggc cag cct cgc tat cca atc aat tct 634
 Val Lys Tyr Thr Asp Ala Arg Gly Gln Pro Arg Tyr Pro Ile Asn Ser
 180 185 190
 gtt aat att ctg aaa gcc cat ggg aga agt cag ata gaa agc atg ctg 682
 Val Asn Ile Leu Lys Ala His Gly Arg Ser Gln Ile Glu Ser Met Leu
 195 200 205 210
 atc aat ggc tat gcg ctc aat tgt gtg gtt gga tct cag ggc atg ccc 730
 Ile Asn Gly Tyr Ala Leu Asn Cys Val Val Gly Ser Gln Gly Met Pro
 215 220 225
 aag aga ata gtt aat gca aaa att gct tgt ctt gac ttc agc ctg cag 778
 Lys Arg Ile Val Asn Ala Lys Ile Ala Cys Leu Asp Phe Ser Leu Gln
 230 235 240
 aaa aca aaa atg aag ctt ggt gta cag gtg gtt att aca gac cct gag 826
 Lys Thr Lys Met Lys Leu Gly Val Gln Val Val Ile Thr Asp Pro Glu
 245 250 255
 aaa ttg gac caa att aga cag aga gaa tcg gat atc acc aag gag aga 874
 Lys Leu Asp Gln Ile Arg Gln Arg Glu Ser Asp Ile Thr Lys Glu Arg

260	265	270	
att cag aag atc ctg gca act ggt gcc aat gtt att cta acc act ggt	922		
Ile Gln Lys Ile Leu Ala Thr Gly Ala Asn Val Ile Leu Thr Thr Gly			
275	280	285	290
ggc att gat gat atg tgt ctc aag tat ttt gtg gaa gct ggt gcc atg	970		
Gly Ile Asp Asp Met Cys Leu Lys Tyr Phe Val Glu Ala Gly Ala Met			
295	300	305	
gct gtt agg aga gtt tta aaa cga gac ctg aag tgt gtt gca aaa gct	1018		
Ala Val Arg Arg Val Leu Lys Arg Asp Leu Lys Cys Val Ala Lys Ala			
310	315	320	
tct gga gca act atc ctg tct acg ctg gcc aat ttg gaa ggc gaa gaa	1066		
Ser Gly Ala Thr Ile Leu Ser Thr Leu Ala Asn Leu Glu Gly Glu Glu			
325	330	335	
act ttt gaa gtg acg atg ttg gga caa gcg gaa gag gtc gta cag gag	1114		
Thr Phe Glu Val Thr Met Leu Gly Gln Ala Glu Glu Val Val Gln Glu			
340	345	350	
aga att tgt gat gat gag ctg atc tta atc aaa aat act aag gct cgt	1162		
Arg Ile Cys Asp Asp Glu Leu Ile Leu Ile Lys Asn Thr Lys Ala Arg			
355	360	365	370
aca tct gct tca atc atc tta cga gga gca aat gat ttc atg tgt gat	1210		
Thr Ser Ala Ser Ile Ile Leu Arg Gly Ala Asn Asp Phe Met Cys Asp			
375	380	385	
gaa atg gag cgc tct tta cat gat gct ctt tgt gtg gtg aag aga gtt	1258		
Glu Met Glu Arg Ser Leu His Asp Ala Leu Cys Val Val Lys Arg Val			
390	395	400	
ttg gag tcg aaa tct gtg gtc cca ggt gga ggt gct gta gaa gct gcc	1306		
Leu Glu Ser Lys Ser Val Val Pro Gly Gly Gly Ala Val Glu Ala Ala			
405	410	415	
ctg tcc ata tac ctg gaa aac tat gca aca agc atg gga tct cgg gaa	1354		

Leu Ser Ile Tyr Leu Glu Asn Tyr Ala Thr Ser Met Gly Ser Arg Glu
 420 425 430
 cag ctt gct att gca gag ttt gca aga tct ctg ctt gtg att cct aat 1402
 Gln Leu Ala Ile Ala Glu Phe Ala Arg Ser Leu Leu Val Ile Pro Asn
 435 440 445 450
 aca ctg gca gtg aat gct gcc cag gac tcc acc gac ctg gtt gcc aag 1450
 Thr Leu Ala Val Asn Ala Ala Gln Asp Ser Thr Asp Leu Val Ala Lys
 455 460 465
 tta aga gct ttt cac aat gag gct caa gtg aac ccg gaa cgt aaa aat 1498
 Leu Arg Ala Phe His Asn Glu Ala Gln Val Asn Pro Glu Arg Lys Asn
 470 475 480
 cta aag tgg att ggt ctt gat ttg gtc cat ggg aaa cca cga gac aac 1546
 Leu Lys Trp Ile Gly Leu Asp Leu Val His Gly Lys Pro Arg Asp Asn
 485 490 495
 aag caa gca ggg gtc ttt gaa cca acc ata gtt aaa gtg aag agc ctg 1594
 Lys Gln Ala Gly Val Phe Glu Pro Thr Ile Val Lys Val Lys Ser Leu
 500 505 510
 aag ttc gca aca gag gct gca atc acc atc ctt cgg att gat gat ctg 1642
 Lys Phe Ala Thr Glu Ala Ala Ile Thr Ile Leu Arg Ile Asp Asp Leu
 515 520 525 530
 ata aaa tta cac cca gaa tgc aaa gac gat aaa cac gga agt tat gaa 1690
 Ile Lys Leu His Pro Glu Cys Lys Asp Asp Lys His Gly Ser Tyr Glu
 535 540 545
 aat gct gtt cac tct gga gcc ctt gat gac tga ttggatttcc ctgttattta 1743
 Asn Ala Val His Ser Gly Ala Leu Asp Asp
 550 555
 taacagtgtc aggtgcaatg ccgtagcctt ggggtgtctca cattaaagta cagcaagctg 1803
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<210> 594

<211> 556

<212> PRT

<213> Mus musculus

<400> 594

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Ile Arg Ser Gln Asn Val Met Ala Ala Ala Ser Ile Ala Asn Ile Val
      20             25             30
Lys Ser Ser Leu Gly Pro Val Gly Leu Asp Lys Met Leu Val Asp Asp
      35             40             45
Ile Gly Asp Val Thr Ile Thr Asn Asp Gly Ala Thr Ile Leu Lys Leu
      50             55             60
Leu Glu Val Glu His Pro Ala Ala Lys Val Leu Cys Glu Leu Ala Asp
      65             70             75             80
Leu Gln Asp Lys Glu Val Gly Asp Gly Thr Thr Ser Val Val Ile Ile
      85             90             95
Ala Ala Glu Leu Leu Lys Asn Ala Asp Glu Leu Val Lys Gln Lys Ile
      100            105            110
His Pro Thr Ser Val Ile Ser Gly Tyr Arg Leu Ala Cys Lys Glu Ala
      115            120            125
Val Arg Tyr Ile Asn Glu Asn Leu Ile Ile Asn Ala Asp Glu Leu Gly
      130            135            140
Arg Asp Cys Leu Thr Asn Thr Ala Lys Thr Ser Met Ser Ser Lys Ile
      145            150            155            160
Ile Gly Ile Asn Gly Asp Tyr Phe Ala Asn Met Val Val Asp Ala Val
      165            170            175
Leu Ala Val Lys Tyr Thr Asp Ala Arg Gly Gln Pro Arg Tyr Pro Ile

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180	185	190
Asn Ser Val Asn Ile Leu Lys Ala His Gly Arg Ser Gln Ile Glu Ser		
195	200	205
Met Leu Ile Asn Gly Tyr Ala Leu Asn Cys Val Val Gly Ser Gln Gly		
210	215	220
Met Pro Lys Arg Ile Val Asn Ala Lys Ile Ala Cys Leu Asp Phe Ser		
225	230	235
Leu Gln Lys Thr Lys Met Lys Leu Gly Val Gln Val Val Ile Thr Asp		
245	250	255
Pro Glu Lys Leu Asp Gln Ile Arg Gln Arg Glu Ser Asp Ile Thr Lys		
260	265	270
Glu Arg Ile Gln Lys Ile Leu Ala Thr Gly Ala Asn Val Ile Leu Thr		
275	280	285
Thr Gly Gly Ile Asp Asp Met Cys Leu Lys Tyr Phe Val Glu Ala Gly		
290	295	300
Ala Met Ala Val Arg Arg Val Leu Lys Arg Asp Leu Lys Cys Val Ala		
305	310	315
Lys Ala Ser Gly Ala Thr Ile Leu Ser Thr Leu Ala Asn Leu Glu Gly		
325	330	335
Glu Glu Thr Phe Glu Val Thr Met Leu Gly Gln Ala Glu Glu Val Val		
340	345	350
Gln Glu Arg Ile Cys Asp Asp Glu Leu Ile Leu Ile Lys Asn Thr Lys		
355	360	365
Ala Arg Thr Ser Ala Ser Ile Ile Leu Arg Gly Ala Asn Asp Phe Met		
370	375	380
Cys Asp Glu Met Glu Arg Ser Leu His Asp Ala Leu Cys Val Val Lys		
385	390	395
Arg Val Leu Glu Ser Lys Ser Val Val Pro Gly Gly Gly Ala Val Glu		
405	410	415

Ala Ala Leu Ser Ile Tyr Leu Glu Asn Tyr Ala Thr Ser Met Gly Ser

420

425

430

Arg Glu Gln Leu Ala Ile Ala Glu Phe Ala Arg Ser Leu Leu Val Ile

435

440

445

Pro Asn Thr Leu Ala Val Asn Ala Ala Gln Asp Ser Thr Asp Leu Val

450

455

460

Ala Lys Leu Arg Ala Phe His Asn Glu Ala Gln Val Asn Pro Glu Arg

465

470

475

480

Lys Asn Leu Lys Trp Ile Gly Leu Asp Leu Val His Gly Lys Pro Arg

485

490

495

Asp Asn Lys Gln Ala Gly Val Phe Glu Pro Thr Ile Val Lys Val Lys

500

505

510

Ser Leu Lys Phe Ala Thr Glu Ala Ala Ile Thr Ile Leu Arg Ile Asp

515

520

525

Asp Leu Ile Lys Leu His Pro Glu Cys Lys Asp Asp Lys His Gly Ser

530

535

540

Tyr Glu Asn Ala Val His Ser Gly Ala Leu Asp Asp

545

550

555

<210> 595

<211> 527

<212> DNA

<213> Mus musculus

<400> 595

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gatgtgtccc gcctgcgctc ggtgctcatg tccctgaagc aaacaccact gtcccgtag 180
gtgcccgtca cgagaacggc cgcgaacgac atgggccttg ctggggcaga ggagcagctg 240

cttccgccag agtggaaactt cctctggcag ctgcacacac agcctgttct gttcctctga 300
 atctctggga gctaggaagt gggaccctta cccctttcac cccacaactc cttcctgggc 360
 ccctggccca gcccctcatg actcctgtca gcccactcaa ttgtgactgt ccttcctgat 420
 gtatttttct tggcttaaag ggtgtgtaa ctctttttac acttatttat tagtatactc 480
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<210> 596

<211> 475

<212> DNA

<213> Mus musculus

<400> 596

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 aagctacccc ttggacaaag gtgttcaaact ctcaaagac accacctgag gccattgcac 180
 tctgctctag cctactggag tacacgccat cctcaaggct ctccccactc gaggtttgtg 240
 cccacagctt ctctgatgaa ctgcggagac tggagccca gctccccaac gaccgcccgc 300
 tccccccct gticaacttc agtcctgggt gtcccagca ggccctgctt ctcccctcac 360
 cacttcctac aaccatcct cacaagcttt aactgaagct cagactggcc aagattggca 420
 gccatctgat gccacaactg ctaccctcgc tagctcttcc tgagggcccc acgac 475

<210> 597

<211> 953

<212> DNA

<213> Mus musculus

<400> 597

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acccgctcga actacagcca tgtccgggga cgagatgatt ttgataccta ctatgagcaa 180
aaagaaaaag aagaagaaga agccitttlat gttagatgaa gaaggatgatg ccagacaga 240
agaaaccag cctcagaga caaagaagt ggagccagaa ccaactgaag aaaaagacgt 300
ggacgctgat gaggaagaca gtaggaagaa agatgcttct gatgacttag atgatttgaa 360
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ggatgacgtt gacattatga ttgcngacga taagagtcaa gaaccatgcg cggtagctta 540
tcccttaagt gagggtagtt tacttgcact ggcgtcgtgt cgacgcgttc ttggaaccgt 600
gcggtcctac gtactgcctc gagtgtcccc ttgcacttc gtattggata gccgacgatg 660
cgiccaatgt cgccatgatg ggaatgcccc ttiagcgtta cgcagttgtg tgcctgctac 720
ttagatgag cctccggtea ttgttcacat ttcagttcgt ctggagttat agcgcggctt 780
gggtgtgttt gcgcgaatat gtgtgggggt ggtggtcgcg tgaagtctcg ttgtgggggt 840
gtgtggttgt ctatacgtct gtgtgtgtgg agtgaagaa cgtgggggcg ttatgcgcg 900
taaaagccgt gtgtataagg cgcgcctctc tacccttcca tnnntnnng nnn 953

<210> 598

<211> 1059

<212> DNA

<213> Mus musculus

<220>

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<222> (157).. (918)

<400> 598

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ggattccata cacaggaagc ccctgaggct gagctg atg aag aca cag tgg ggt 174

Met Lys Thr Gln Trp Gly

	1	5	
gag gtc tgg aca cac ctg tta ctg ctg ctt cta ggt ttt ctc cat gtg	222		
Glu Val Trp Thr His Leu Leu Leu Leu Leu Leu Gly Phe Leu His Val			
10	15	20	
tcc tgg gcc caa agc agc tgc acc ggg ccc cct ggc atc cct ggc atc	270		
Ser Trp Ala Gln Ser Ser Cys Thr Gly Pro Pro Gly Ile Pro Gly Ile			
25	30	35	
cct ggg gtc cct ggg gtt cct ggc tct gat ggc caa cct ggc act cca	318		
Pro Gly Val Pro Gly Val Pro Gly Ser Asp Gly Gln Pro Gly Thr Pro			
40	45	50	
ggg att aaa ggg gag aaa ggg ctc cct gga ctg gct gga gac ctt ggt	366		
Gly Ile Lys Gly Glu Lys Gly Leu Pro Gly Leu Ala Gly Asp Leu Gly			
55	60	65	70
gag ttt gga gag aaa ggg gac cca ggg atc cct ggg act cca ggc aaa	414		
Glu Phe Gly Glu Lys Gly Asp Pro Gly Ile Pro Gly Thr Pro Gly Lys			
75	80	85	
gtt ggc cct aag ggt ccc gtc ggc cct aag ggt act cca ggc ccc tct	462		
Val Gly Pro Lys Gly Pro Val Gly Pro Lys Gly Thr Pro Gly Pro Ser			
90	95	100	
gga ccc cgc ggt ccc aaa ggc gat tct ggg gac tac ggg gct aca cag	510		
Gly Pro Arg Gly Pro Lys Gly Asp Ser Gly Asp Tyr Gly Ala Thr Gln			
105	110	115	
aaa gtc gcc ttc tct gcc ctg agg acc atc aac agc ccc ttg cga ccg	558		
Lys Val Ala Phe Ser Ala Leu Arg Thr Ile Asn Ser Pro Leu Arg Pro			
120	125	130	
aac cag gtc att cgc ttc gaa aag gtg atc acc aac gcg aac gag aac	606		
Asn Gln Val Ile Arg Phe Glu Lys Val Ile Thr Asn Ala Asn Glu Asn			
135	140	145	150
tat gag cca cgc aac ggc aag ttc acc tgc aag gtg cct ggc ctc tac	654		

Tyr Glu Pro Arg Asn Gly Lys Phe Thr Cys Lys Val Pro Gly Leu Tyr
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 tac ttc acc tat cat gcc agc tcc cgg ggc aac ctg tgt gtg aat ctc 702
 Tyr Phe Thr Tyr His Ala Ser Ser Arg Gly Asn Leu Cys Val Asn Leu
 170 175 180
 gtt cgt ggc cgc gat cgg gac agc atg cag aaa gta gtc acc ttc tgt 750
 Val Arg Gly Arg Asp Arg Asp Ser Met Gln Lys Val Val Thr Phe Cys
 185 190 195
 gac tat gcc cag aac acc ttc cag gtg acc aca ggt ggg gta gtc ttg 798
 Asp Tyr Ala Gln Asn Thr Phe Gln Val Thr Thr Gly Gly Val Val Leu
 200 205 210
 aag cta gag caa gag gag gtt gtt cac ctg cag gcc aca gac aag aac 846
 Lys Leu Glu Gln Glu Glu Val Val His Leu Gln Ala Thr Asp Lys Asn
 215 220 225 230
 tcc ctc ctg ggc att gag ggt gcc aac agc atc ttc act ggc ttt ctg 894
 Ser Leu Leu Gly Ile Glu Gly Ala Asn Ser Ile Phe Thr Gly Phe Leu
 235 240 245
 ctt ttc cct gac atg gat gcg taa tcacggggtc aaattacacc tatccaacac 948
 Leu Phe Pro Asp Met Asp Ala
 250
 catcttcctg ctccctgcagc aatcctccct ggacccctga catcaccccc ttgactgcct 1008
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<211> 253

<212> PRT

<213> Mus musculus

<400> 599

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 Pro Gly Ile Pro Gly Ile Pro Gly Val Pro Gly Val Pro Gly Ser Asp
 35 40 45
 Gly Gln Pro Gly Thr Pro Gly Ile Lys Gly Glu Lys Gly Leu Pro Gly
 50 55 60
 Leu Ala Gly Asp Leu Gly Glu Phe Gly Glu Lys Gly Asp Pro Gly Ile
 65 70 75 80
 Pro Gly Thr Pro Gly Lys Val Gly Pro Lys Gly Pro Val Gly Pro Lys
 85 90 95
 Gly Thr Pro Gly Pro Ser Gly Pro Arg Gly Pro Lys Gly Asp Ser Gly
 100 105 110
 Asp Tyr Gly Ala Thr Gln Lys Val Ala Phe Ser Ala Leu Arg Thr Ile
 115 120 125
 Asn Ser Pro Leu Arg Pro Asn Gln Val Ile Arg Phe Glu Lys Val Ile
 130 135 140
 Thr Asn Ala Asn Glu Asn Tyr Glu Pro Arg Asn Gly Lys Phe Thr Cys
 145 150 155 160
 Lys Val Pro Gly Leu Tyr Tyr Phe Thr Tyr His Ala Ser Ser Arg Gly
 165 170 175
 Asn Leu Cys Val Asn Leu Val Arg Gly Arg Asp Arg Asp Ser Met Gln
 180 185 190
 Lys Val Val Thr Phe Cys Asp Tyr Ala Gln Asn Thr Phe Gln Val Thr
 195 200 205
 Thr Gly Gly Val Val Leu Lys Leu Glu Gln Glu Glu Val Val His Leu
 210 215 220
 Gln Ala Thr Asp Lys Asn Ser Leu Leu Gly Ile Glu Gly Ala Asn Ser

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 Ile Phe Thr Gly Phe Leu Leu Phe Pro Asp Met Asp Ala
 245 250

<210> 600

<211> 689

<212> DNA

<213> Mus musculus

<400> 600

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 ttggaagac atccagctga acctttcac aagggttct gaagacctta aaaccacat 420
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 gattccattt tgtggggaaa ttgactgtga ggactggatc aaaaagatga ctgccaggga 540
 tcaagatgtg gaacctgggtg ctccatccat gggagccana agcctttgca ttcctttcaa 600
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 acagcttggt tggtcggagt actgatgga 689

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<211> 669

<212> DNA

<213> Mus musculus

<400> 601

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 gaatttggta aacgcccctgc agaagatatg gaagaggagc aagccittaa aagatctaga 180
 aatactgatg agatggttga attgcgcatt ttgcttcaga gcaagaatgc tggagcagtg 240
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 ggaataattg gtggttaaagg ttctagaagc agagaacttc gacgaaacac tcagactaca 600
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<211> 892

<212> DNA

<213> Mus musculus

<400> 602

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 cataggcata tccacacact gagtgacagt gtgacataig catatgtgta actcgagtat 180
 ttgttgagga acttttagagg cagaatacaa acitttictact taaaaaacgt ttttaaattg 240
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 ccagcatttt ctcataagct gataaacctc atcaggacag ttgggtggac atggcagacg 420
 ctttcttict ttacagagiat tcacaagccg tgtcactgtc atctggccat gatttggggc 480
 tatcatttgc aggaacaagg gcatgggact aaaatccgag tcacagtaag tgagcagctc 540
 gtgcaagtgt cactccaaan gaccagacat cagaggcgat ataaaattta cactggaata 600

aacattccgg agcgtaccag aacactgggc tgtccccggt cgtcttgact gtgtagtact 660
 ccttatcggt ttcaattgct ttggttaaac caagtctccg atcttcactt gatgctcact 720
 ctcaacaagg acaattcttg ctgctaagtc cccggtgacc gaattgagag aanccaggta 780
 gtccatcccc ttacaaacct ggaatggcata atttggccgc gggtgaaggt gaatttgtcc 840
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<210> 603

<211> 2408

<212> DNA

<213> Mus musculus

<220>

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<222> (93).. (2060)

<400> 603

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 Met Met Lys Phe Thr Val Val
 1 5
 gcg gcg gcg ttg ctg ctg ctg ggc gcg gtg cgg gcc gag gag gag gac 161
 Ala Ala Ala Leu Leu Leu Leu Gly Ala Val Arg Ala Glu Glu Glu Asp
 10 15 20
 aag aag gag gat gtg ggc acg gtg gtc ggc atc gac ttg ggg acc acc 209
 Lys Lys Glu Asp Val Gly Thr Val Val Gly Ile Asp Leu Gly Thr Thr
 25 30 35
 tat tcc tgc ttc ggt gtg ttc aag aac ggc cgc gtg gag atc ata gcc 257
 Tyr Ser Cys Phe Gly Val Phe Lys Asn Gly Arg Val Glu Ile Ile Ala
 40 45 50 55

aac gat cag ggc aac cgc atc acg ccg tcg tat gtg gcc ttc act cct 305
 Asn Asp Gln Gly Asn Arg Ile Thr Pro Ser Tyr Val Ala Phe Thr Pro
 60 65 70
 gaa ggg gag cgt ctg att ggc gat gcg gcc aag aac caa ctc acg tcc 353
 Glu Gly Glu Arg Leu Ile Gly Asp Ala Ala Lys Asn Gln Leu Thr Ser
 75 80 85
 aac ccc gag aac acg gtc ttc gat gcc aag cgc ctc atc gga cgc act 401
 Asn Pro Glu Asn Thr Val Phe Asp Ala Lys Arg Leu Ile Gly Arg Thr
 90 95 100
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 Trp Asn Asp Pro Ser Val Gln Gln Asp Ile Lys Phe Leu Pro Phe Lys
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 gtg gtt gaa aag aaa act aaa ccg tac att caa gtt gat att gga ggt 497
 Val Val Glu Lys Lys Thr Lys Pro Tyr Ile Gln Val Asp Ile Gly Gly
 120 125 130 135
 ggg caa acc aag aca ttt gcc cca gaa gaa att tct gcc atg gtt ctc 545
 Gly Gln Thr Lys Thr Phe Ala Pro Glu Glu Ile Ser Ala Met Val Leu
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 Thr Lys Met Lys Glu Thr Ala Glu Ala Tyr Leu Gly Lys Lys Val Thr
 155 160 165
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 His Ala Val Val Thr Val Pro Ala Tyr Phe Asn Asp Ala Gln Arg Gln
 170 175 180
 gca acc aaa gat gct ggc act att gct gga ctg aat gtc atg agg atc 689
 Ala Thr Lys Asp Ala Gly Thr Ile Ala Gly Leu Asn Val Met Arg Ile
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 Ile Asn Glu Pro Thr Ala Ala Ala Ile Ala Tyr Gly Leu Asp Lys Arg

200	205	210	215	
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Glu Gly Glu Lys Asn Ile Leu Val Phe Asp Leu Gly Gly Gly Thr Phe				
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Asp Val Ser Leu Leu Thr Ile Asp Asn Gly Val Phe Glu Trp Val Ala				
	235	240	245	
act aat gga gat act cac ctg ggt ggg gaa gac ttt gat cag cgg gtc				881
Thr Asn Gly Asp Thr His Leu Gly Gly Glu Asp Phe Asp Gln Arg Val				
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atg gaa cac ttc atc aag ttg tac aaa aag aaa act ggt aaa gat gtt				929
Met Glu His Phe Ile Lys Leu Tyr Lys Lys Lys Thr Gly Lys Asp Val				
	265	270	275	
agg aaa gac aac aga gct gtg cag aaa ctc cgg cgt gag gta gaa aag				977
Arg Lys Asp Asn Arg Ala Val Gln Lys Leu Arg Arg Glu Val Glu Lys				
280	285	290	295	
gct aag aga gcc ttg tct tct cag cat caa gca agg att gaa att gag				1025
Ala Lys Arg Ala Leu Ser Ser Gln His Gln Ala Arg Ile Glu Ile Glu				
	300	305	310	
tcc ttc ttc gaa gga gaa gac ttc tca gag acc ctt act cgg gcc aaa				1073
Ser Phe Phe Glu Gly Glu Asp Phe Ser Glu Thr Leu Thr Arg Ala Lys				
	315	320	325	
ttt gga gag ctg aac atg gac ctg ttc cgc tct acc atg aag cct gtc				1121
Phe Gly Glu Leu Asn Met Asp Leu Phe Arg Ser Thr Met Lys Pro Val				
	330	335	340	
cag aaa gtg ttg gaa gac tct gat ctg aag aaa tct gat att gat gaa				1169
Gln Lys Val Leu Glu Asp Ser Asp Leu Lys Lys Ser Asp Ile Asp Glu				
	345	350	355	
att gct ctg gtt ggt gga tct act cga att cca aag att cag caa ctg				1217

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 Val Lys Glu Phe Phe Asn Gly Lys Glu Pro Ser Arg Gly Ile Asn Pro
 380 385 390
 gat gag gct gta gcc tat ggt gcc gct gtc cag gct ggt gtc ctc tct 1313
 Asp Glu Ala Val Ala Tyr Gly Ala Ala Val Gln Ala Gly Val Leu Ser
 395 400 405
 ggt gat cag gat aca ggt gat ctg gta ctg ctt gat gtg tgt ccc ctt 1361
 Gly Asp Gln Asp Thr Gly Asp Leu Val Leu Leu Asp Val Cys Pro Leu
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 aca ctt ggt att gaa act gig gga gga gtc atg aca aaa ctg att cca 1409
 Thr Leu Gly Ile Glu Thr Val Gly Gly Val Met Thr Lys Leu Ile Pro
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 Arg Asn Thr Val Val Pro Thr Lys Lys Ser Gln Ile Phe Ser Thr Ala
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 460 465 470
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 475 480 485
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 Ile Pro Pro Ala Pro Arg Gly Val Pro Gln Ile Glu Val Thr Phe Glu
 490 495 500
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 Ile Asp Val Asn Gly Ile Leu Arg Val Thr Ala Glu Asp Lys Gly Thr
 505 510 515

gga aac aaa aac aaa atc aca att acc aat gac caa aac cgc ctg aca 1697
 Gly Asn Lys Asn Lys Ile Thr Ile Thr Asn Asp Gln Asn Arg Leu Thr
 520 525 530 535
 cct gaa gaa att gaa agg atg gtt aat gat gct gag aag ttt gct gag 1745
 Pro Glu Glu Ile Glu Arg Met Val Asn Asp Ala Glu Lys Phe Ala Glu
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 Glu Asp Lys Lys Leu Lys Glu Arg Ile Asp Thr Arg Asn Glu Leu Glu
 555 560 565
 agc tat gct tat tct ctc aag aac cag att gga gat aaa gaa aag ctg 1841
 Ser Tyr Ala Tyr Ser Leu Lys Asn Gln Ile Gly Asp Lys Glu Lys Leu
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 Glu Glu Lys Ile Glu Trp Leu Glu Ser His Gln Asp Ala Asp Ile Glu
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 620 625 630
 atc agc aaa ctc tat gga agt gga ggc cct ccc cca act ggt gaa gag 2033
 Ile Ser Lys Leu Tyr Gly Ser Gly Gly Pro Pro Pro Thr Gly Glu Glu
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<210> 604

<211> 655

<212> PRT

<213> Mus musculus

<400> 604

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			20					25					30		
Gly	Ile	Asp	Leu	Gly	Thr	Thr	Tyr	Ser	Cys	Phe	Gly	Val	Phe	Lys	Asn
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Gly	Arg	Val	Glu	Ile	Ile	Ala	Asn	Asp	Gln	Gly	Asn	Arg	Ile	Thr	Pro
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Ser	Tyr	Val	Ala	Phe	Thr	Pro	Glu	Gly	Glu	Arg	Leu	Ile	Gly	Asp	Ala
	65				70					75				80	
Ala	Lys	Asn	Gln	Leu	Thr	Ser	Asn	Pro	Glu	Asn	Thr	Val	Phe	Asp	Ala
			85							90				95	
Lys	Arg	Leu	Ile	Gly	Arg	Thr	Trp	Asn	Asp	Pro	Ser	Val	Gln	Gln	Asp
			100						105					110	
Ile	Lys	Phe	Leu	Pro	Phe	Lys	Val	Val	Glu	Lys	Lys	Thr	Lys	Pro	Tyr
		115						120					125		
Ile	Gln	Val	Asp	Ile	Gly	Gly	Gly	Gln	Thr	Lys	Thr	Phe	Ala	Pro	Glu
		130						135					140		

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 Tyr Leu Gly Lys Lys Val Thr His Ala Val Val Thr Val Pro Ala Tyr
 165 170 175
 Phe Asn Asp Ala Gln Arg Gln Ala Thr Lys Asp Ala Gly Thr Ile Ala
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 Gly Leu Asn Val Met Arg Ile Ile Asn Glu Pro Thr Ala Ala Ala Ile
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 Ala Tyr Gly Leu Asp Lys Arg Glu Gly Glu Lys Asn Ile Leu Val Phe
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 Asp Leu Gly Gly Gly Thr Phe Asp Val Ser Leu Leu Thr Ile Asp Asn
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 Gly Val Phe Glu Trp Val Ala Thr Asn Gly Asp Thr His Leu Gly Gly
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 Glu Asp Phe Asp Gln Arg Val Met Glu His Phe Ile Lys Leu Tyr Lys
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 Lys Lys Thr Gly Lys Asp Val Arg Lys Asp Asn Arg Ala Val Gln Lys
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 Leu Arg Arg Glu Val Glu Lys Ala Lys Arg Ala Leu Ser Ser Gln His
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 Lys Lys Ser Asp Ile Asp Glu Ile Ala Leu Val Gly Gly Ser Thr Arg
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 Ile Pro Lys Ile Gln Gln Leu Val Lys Glu Phe Phe Asn Gly Lys Glu

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Val Gln Ala Gly Val Leu Ser Gly Asp Gln Asp Thr Gly Asp Leu Val			
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Leu Leu Asp Val Cys Pro Leu Thr Leu Gly Ile Glu Thr Val Gly Gly			
420	425	430	
Val Met Thr Lys Leu Ile Pro Arg Asn Thr Val Val Pro Thr Lys Lys			
435	440	445	
Ser Gln Ile Phe Ser Thr Ala Ser Asp Asn Gln Pro Thr Val Thr Ile			
450	455	460	
Lys Val Tyr Glu Gly Glu Arg Pro Leu Thr Lys Asp Asn His Leu Leu			
465	470	475	480
Gly Thr Phe Asp Leu Thr Gly Ile Pro Pro Ala Pro Arg Gly Val Pro			
485	490	495	
Gln Ile Glu Val Thr Phe Glu Ile Asp Val Asn Gly Ile Leu Arg Val			
500	505	510	
Thr Ala Glu Asp Lys Gly Thr Gly Asn Lys Asn Lys Ile Thr Ile Thr			
515	520	525	
Asn Asp Gln Asn Arg Leu Thr Pro Glu Glu Ile Glu Arg Met Val Asn			
530	535	540	
Asp Ala Glu Lys Phe Ala Glu Glu Asp Lys Lys Leu Lys Glu Arg Ile			
545	550	555	560
Asp Thr Arg Asn Glu Leu Glu Ser Tyr Ala Tyr Ser Leu Lys Asn Gln			
565	570	575	
Ile Gly Asp Lys Glu Lys Leu Gly Gly Lys Leu Ser Ser Glu Asp Lys			
580	585	590	
Glu Thr Met Glu Lys Ala Val Glu Glu Lys Ile Glu Trp Leu Glu Ser			
595	600	605	

His Gln Asp Ala Asp Ile Glu Asp Phe Lys Ala Lys Lys Lys Glu Leu

610

615

620

Glu Glu Ile Val Gln Pro Ile Ile Ser Lys Leu Tyr Gly Ser Gly Gly

625

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635

640

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645

650

655

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<211> 4321

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (333).. (3053)

<400> 605

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tccggctcct cgctcgcccc ctctccgctt cc atg tgc cgg ata gcg gga ggc 353

Met Cys Arg Ile Ala Gly Gly

1

5

cgc ggg acc ctg ctg ccg ctt ctg gcg gcc ttg ctt cag gcg tct gtg 401

Arg Gly Thr Leu Leu Pro Leu Leu Ala Ala Leu Leu Gln Ala Ser Val

10

15

20

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Glu Ala Ser Gly Glu Ile Ala Leu Cys Lys Thr Gly Phe Pro Glu Asp
 25 30 35
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 Val Tyr Ser Ala Val Leu Pro Lys Asp Val His Glu Gly Gln Pro Leu
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 ctc aat gtg aaa ttc agc aac tgc aat aga aaa agg aaa gtt cag tat 545
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 60 65 70
 gaa agc agc gag cca gca gat ttc aag gtg gac gag gac ggc acg gtg 593
 Glu Ser Ser Glu Pro Ala Asp Phe Lys Val Asp Glu Asp Gly Thr Val
 75 80 85
 tat gct gtg aga agc ttc cct ctc act gca gag cag gca aag ttc ctg 641
 Tyr Ala Val Arg Ser Phe Pro Leu Thr Ala Glu Gln Ala Lys Phe Leu
 90 95 100
 ata tat gcc caa gac aaa gaa acc cag gaa aag tgg cag gta gct gta 689
 Ile Tyr Ala Gln Asp Lys Glu Thr Gln Glu Lys Trp Gln Val Ala Val
 105 110 115
 aac ctg agc cgg gag cca acc ctg act gag gag cct atg aag gaa cca 737
 Asn Leu Ser Arg Glu Pro Thr Leu Thr Glu Glu Pro Met Lys Glu Pro
 120 125 130 135
 cat gaa att gaa gaa ata gta ttc cct aga caa ctt gcc aag cac agt 785
 His Glu Ile Glu Glu Ile Val Phe Pro Arg Gln Leu Ala Lys His Ser
 140 145 150
 gga gct cta caa agg cag aag aga gac tgg gtc atc ccg cca atc aac 833
 Gly Ala Leu Gln Arg Gln Lys Arg Asp Trp Val Ile Pro Pro Ile Asn
 155 160 165
 ttg cca gaa aac tcc aga gga ccc ttt cct caa gag ctt gtc aga atc 881
 Leu Pro Glu Asn Ser Arg Gly Pro Phe Pro Gln Glu Leu Val Arg Ile
 170 175 180


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Arg Ser Asp Arg Asp Lys Asn Leu Ser Leu Arg Tyr Ser Val Thr Gly
      185              190              195
cca gga gct gac cag cct cca acg ggc atc ttc att atc aac ccg atc      977
Pro Gly Ala Asp Gln Pro Pro Thr Gly Ile Phe Ile Ile Asn Pro Ile
200              205              210              215
tca gga cag ctg tca gtc aca aag cct ctg gat cga gag ctg ata gcc      1025
Ser Gly Gln Leu Ser Val Thr Lys Pro Leu Asp Arg Glu Leu Ile Ala
      220              225              230
cgg ttt cac ttg aga gca cat gca gtg gac atc aat ggc aat caa gtg      1073
Arg Phe His Leu Arg Ala His Ala Val Asp Ile Asn Gly Asn Gln Val
      235              240              245
gag aac ccc att gac att gtc atc aat gtt att gac atg aat gat aac      1121
Glu Asn Pro Ile Asp Ile Val Ile Asn Val Ile Asp Met Asn Asp Asn
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aga cct gag ttt ctg cac cag gtt tgg aat ggg tct gtt cca gag gga      1169
Arg Pro Glu Phe Leu His Gln Val Trp Asn Gly Ser Val Pro Glu Gly
      265              270              275
tca aag cct ggg acg tat gtg atg acg gtc act gcc att gat gcg gat      1217
Ser Lys Pro Gly Thr Tyr Val Met Thr Val Thr Ala Ile Asp Ala Asp
280              285              290              295
gat cca aat gcc ctg aat gga atg ctg cgg tac agg atc ctg tcc cag      1265
Asp Pro Asn Ala Leu Asn Gly Met Leu Arg Tyr Arg Ile Leu Ser Gln
      300              305              310
gcg ccc agc aca cct tca ccc aac atg ttt aca atc aac aat gag act      1313
Ala Pro Ser Thr Pro Ser Pro Asn Met Phe Thr Ile Asn Asn Glu Thr
      315              320              325
ggg gac atc atc act gtg gca gct ggt ctg gat cga gag aaa gtg caa      1361
Gly Asp Ile Ile Thr Val Ala Ala Gly Leu Asp Arg Glu Lys Val Gln

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330	335	340	
cag tat acg tta ata att caa gcc aca gac atg gaa ggc aat ccc act			1409
Gln Tyr Thr Leu Ile Ile Gln Ala Thr Asp Met Glu Gly Asn Pro Thr			
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tat ggc ctt tca aac aca gcc aca gcc gtc atc acg gtg aca gat gtc			1457
Tyr Gly Leu Ser Asn Thr Ala Thr Ala Val Ile Thr Val Thr Asp Val			
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aat gac aat cct cca gag ttt act gcc atg act ttc tac gga gaa gtc			1505
Asn Asp Asn Pro Pro Glu Phe Thr Ala Met Thr Phe Tyr Gly Glu Val			
380	385	390	
cct gag aac agg gtg gac gtc att gta gcc aac cta act gtc acg gac			1553
Pro Glu Asn Arg Val Asp Val Ile Val Ala Asn Leu Thr Val Thr Asp			
395	400	405	
aaa gat cag ccc cac acg ccg gcc tgg aat gcg gca tac aga atc agt			1601
Lys Asp Gln Pro His Thr Pro Ala Trp Asn Ala Ala Tyr Arg Ile Ser			
410	415	420	
ggt gga gac cct aca gga agg ttt gcc atc ctg aca gac ccc aac agc			1649
Gly Gly Asp Pro Thr Gly Arg Phe Ala Ile Leu Thr Asp Pro Asn Ser			
425	430	435	
aat gat ggg cta gtc aca gtg gta aaa cca att gac ttt gaa acg aat			1697
Asn Asp Gly Leu Val Thr Val Val Lys Pro Ile Asp Phe Glu Thr Asn			
440	445	450	455
agg atg ttt gtc ctt act gtt gct gca gaa aac caa gtg cca tta gct			1745
Arg Met Phe Val Leu Thr Val Ala Ala Glu Asn Gln Val Pro Leu Ala			
460	465	470	
aaa ggc att cag cac cca cct cag tcg aca gcc act gtg tct gtg aca			1793
Lys Gly Ile Gln His Pro Pro Gln Ser Thr Ala Thr Val Ser Val Thr			
475	480	485	
gtt att gat gtc aat gaa aat cct tat ttt gcc cca aat cct aaa atc			1841

Val Ile Asp Val Asn Glu Asn Pro Tyr Phe Ala Pro Asn Pro Lys Ile
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 Ile Arg Gln Glu Glu Gly Leu His Ala Gly Thr Met Leu Thr Thr Leu
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 Thr Ala Gln Asp Pro Asp Arg Tyr Met Gln Gln Asn Ile Arg Tyr Thr
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 Lys Leu Ser Asp Pro Ala Asn Trp Leu Lys Ile Asp Pro Val Asn Gly
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 Gln Ile Thr Thr Ile Ala Val Leu Asp Arg Glu Ser Pro Tyr Val Gln
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 aac aac atc tat aat gct acc ttc ctt gct tct gac aat gga atc ccg 2081
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 Pro Met Ser Gly Thr Gly Thr Leu Gln Ile Tyr Leu Leu Asp Ile Asn
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 Asp Asn Ala Pro Gln Val Leu Pro Gln Glu Ala Glu Thr Cys Glu Thr
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 Pro Glu Pro Asn Ser Ile Asn Ile Ala Ala Leu Asp Tyr Asp Ile Asp
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 Pro Asn Ala Gly Pro Phe Ala Phe Asp Leu Pro Leu Ser Pro Val Thr
 635 640 645

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 Ile Lys Arg Asn Trp Thr Ile Asn Arg Leu Asn Gly Asp Phe Ala Gln
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 Leu Asn Leu Lys Ile Lys Phe Leu Glu Ala Gly Ile Tyr Glu Val Pro
 665 670 675
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 Val Asp Arg Ile Val Gly Ala Gly Leu Gly Thr Gly Ala Ile Ile Ala
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 Ile Asp Pro Glu Asp Asp Val Arg Asp Asn Ile Leu Lys Tyr Asp Glu
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cgg cta gac gag agg cct atc cat gct gag cca cag tac cca gtc cga	2801		
Arg Leu Asp Glu Arg Pro Ile His Ala Glu Pro Gln Tyr Pro Val Arg			
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tcc gca gcc cca cac cct ggg gat att ggg gac ttc att aat gag ggc	2849		
Ser Ala Ala Pro His Pro Gly Asp Ile Gly Asp Phe Ile Asn Glu Gly			
825	830	835	
ctt aaa gct gct gac aac gac ccc acg gcg cca ccg tat gac tcc ctc	2897		
Leu Lys Ala Ala Asp Asn Asp Pro Thr Ala Pro Pro Tyr Asp Ser Leu			
840	845	850	855
tta gtc ttt gac tac gag ggc agc ggc tcc acg gct ggc tcc ttg agc	2945		
Leu Val Phe Asp Tyr Glu Gly Ser Gly Ser Thr Ala Gly Ser Leu Ser			
860	865	870	
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Ser Leu Asn Ser Ser Ser Ser Gly Gly Asp Gln Asp Tyr Asp Tyr Leu			
875	880	885	
aat gac tgg gga ccc cgc ttc aag aaa ctg gcg gac atg tac ggc ggt	3041		
Asn Asp Trp Gly Pro Arg Phe Lys Lys Leu Ala Asp Met Tyr Gly Gly			
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Gly Asp Asp			
905			
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<210> 606

<211> 906

<212> PRT

<213> Mus musculus

<400> 606

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			20					25					30		
Lys	Thr	Gly	Phe	Pro	Glu	Asp	Val	Tyr	Ser	Ala	Val	Leu	Pro	Lys	Asp
		35					40					45			
Val	His	Glu	Gly	Gln	Pro	Leu	Leu	Asn	Val	Lys	Phe	Ser	Asn	Cys	Asn
		50					55						60		

Arg Lys Arg Lys Val Gln Tyr Glu Ser Ser Glu Pro Ala Asp Phe Lys
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 Val Asp Glu Asp Gly Thr Val Tyr Ala Val Arg Ser Phe Pro Leu Thr
 85 90 95
 Ala Glu Gln Ala Lys Phe Leu Ile Tyr Ala Gln Asp Lys Glu Thr Gln
 100 105 110
 Glu Lys Trp Gln Val Ala Val Asn Leu Ser Arg Glu Pro Thr Leu Thr
 115 120 125
 Glu Glu Pro Met Lys Glu Pro His Glu Ile Glu Glu Ile Val Phe Pro
 130 135 140
 Arg Gln Leu Ala Lys His Ser Gly Ala Leu Gln Arg Gln Lys Arg Asp
 145 150 155 160
 Trp Val Ile Pro Pro Ile Asn Leu Pro Glu Asn Ser Arg Gly Pro Phe
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 Pro Gln Glu Leu Val Arg Ile Arg Ser Asp Arg Asp Lys Asn Leu Ser
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 Leu Arg Tyr Ser Val Thr Gly Pro Gly Ala Asp Gln Pro Pro Thr Gly
 195 200 205
 Ile Phe Ile Ile Asn Pro Ile Ser Gly Gln Leu Ser Val Thr Lys Pro
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 Leu Asp Arg Glu Leu Ile Ala Arg Phe His Leu Arg Ala His Ala Val
 225 230 235 240
 Asp Ile Asn Gly Asn Gln Val Glu Asn Pro Ile Asp Ile Val Ile Asn
 245 250 255
 Val Ile Asp Met Asn Asp Asn Arg Pro Glu Phe Leu His Gln Val Trp
 260 265 270
 Asn Gly Ser Val Pro Glu Gly Ser Lys Pro Gly Thr Tyr Val Met Thr
 275 280 285
 Val Thr Ala Ile Asp Ala Asp Asp Pro Asn Ala Leu Asn Gly Met Leu

290	295	300	
Arg Tyr Arg Ile Leu Ser Gln Ala Pro Ser Thr Pro Ser Pro Asn Met			
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Phe Thr Ile Asn Asn Glu Thr Gly Asp Ile Ile Thr Val Ala Ala Gly			
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Leu Asp Arg Glu Lys Val Gln Gln Tyr Thr Leu Ile Ile Gln Ala Thr			
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Asp Met Glu Gly Asn Pro Thr Tyr Gly Leu Ser Asn Thr Ala Thr Ala			
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Val Ile Thr Val Thr Asp Val Asn Asp Asn Pro Pro Glu Phe Thr Ala			
	370	375	380
Met Thr Phe Tyr Gly Glu Val Pro Glu Asn Arg Val Asp Val Ile Val			
385	390	395	400
Ala Asn Leu Thr Val Thr Asp Lys Asp Gln Pro His Thr Pro Ala Trp			
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Asn Ala Ala Tyr Arg Ile Ser Gly Gly Asp Pro Thr Gly Arg Phe Ala			
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Ile Leu Thr Asp Pro Asn Ser Asn Asp Gly Leu Val Thr Val Val Lys			
	435	440	445
Pro Ile Asp Phe Glu Thr Asn Arg Met Phe Val Leu Thr Val Ala Ala			
	450	455	460
Glu Asn Gln Val Pro Leu Ala Lys Gly Ile Gln His Pro Pro Gln Ser			
465	470	475	480
Thr Ala Thr Val Ser Val Thr Val Ile Asp Val Asn Glu Asn Pro Tyr			
	485	490	495
Phe Ala Pro Asn Pro Lys Ile Ile Arg Gln Glu Glu Gly Leu His Ala			
	500	505	510
Gly Thr Met Leu Thr Thr Leu Thr Ala Gln Asp Pro Asp Arg Tyr Met			
	515	520	525

Gln Gln Asn Ile Arg Tyr Thr Lys Leu Ser Asp Pro Ala Asn Trp Leu
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 Lys Ile Asp Pro Val Asn Gly Gln Ile Thr Thr Ile Ala Val Leu Asp
 545 550 555 560
 Arg Glu Ser Pro Tyr Val Gln Asn Asn Ile Tyr Asn Ala Thr Phe Leu
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 Ala Ser Asp Asn Gly Ile Pro Pro Met Ser Gly Thr Gly Thr Leu Gln
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 Ile Tyr Leu Leu Asp Ile Asn Asp Asn Ala Pro Gln Val Leu Pro Gln
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 Glu Ala Glu Thr Cys Glu Thr Pro Glu Pro Asn Ser Ile Asn Ile Ala
 610 615 620
 Ala Leu Asp Tyr Asp Ile Asp Pro Asn Ala Gly Pro Phe Ala Phe Asp
 625 630 635 640
 Leu Pro Leu Ser Pro Val Thr Ile Lys Arg Asn Trp Thr Ile Asn Arg
 645 650 655
 Leu Asn Gly Asp Phe Ala Gln Leu Asn Leu Lys Ile Lys Phe Leu Glu
 660 665 670
 Ala Gly Ile Tyr Glu Val Pro Ile Ile Ile Thr Asp Ser Gly Asn Pro
 675 680 685
 Pro Lys Ser Asn Ile Ser Ile Leu Arg Val Lys Val Cys Gln Cys Asp
 690 695 700
 Ser Asn Gly Asp Cys Thr Asp Val Asp Arg Ile Val Gly Ala Gly Leu
 705 710 715 720
 Gly Thr Gly Ala Ile Ile Ala Ile Leu Leu Cys Ile Ile Ile Leu Leu
 725 730 735
 Ile Leu Val Leu Met Phe Val Val Trp Met Lys Arg Arg Asp Lys Glu
 740 745 750
 Arg Gln Ala Lys Gln Leu Leu Ile Asp Pro Glu Asp Asp Val Arg Asp

755	760	765
Asn Ile Leu Lys Tyr Asp Glu Glu Gly Gly Gly Glu Glu Asp Gln Asp		
770	775	780
Tyr Asp Leu Ser Gln Leu Gln Gln Pro Asp Thr Val Glu Pro Asp Ala		
785	790	795
Ile Lys Pro Val Gly Ile Arg Arg Leu Asp Glu Arg Pro Ile His Ala		800
	805	810
		815
Glu Pro Gln Tyr Pro Val Arg Ser Ala Ala Pro His Pro Gly Asp Ile		
820	825	830
Gly Asp Phe Ile Asn Glu Gly Leu Lys Ala Ala Asp Asn Asp Pro Thr		
835	840	845
Ala Pro Pro Tyr Asp Ser Leu Leu Val Phe Asp Tyr Glu Gly Ser Gly		
850	855	860
Ser Thr Ala Gly Ser Leu Ser Ser Leu Asn Ser Ser Ser Ser Gly Gly		
865	870	875
		880
Asp Gln Asp Tyr Asp Tyr Leu Asn Asp Trp Gly Pro Arg Phe Lys Lys		
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		895
Leu Ala Asp Met Tyr Gly Gly Gly Asp Asp		
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<210> 607

<211> 587

<212> DNA

<213> Mus musculus

<400> 607

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<210> 608

<211> 958

<212> DNA

<213> Mus musculus

<400> 608

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<211> 507

<212> DNA

<213> Mus musculus

<400> 609

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 acatggcttt gaatgattac tatttggctt gtgtgtctact aacagataat aaacgatcac 480
 caggaaaaaa aaaaaaaaaa aaaacat 507

<210> 610

<211> 953

<212> DNA

<213> Mus musculus

<400> 610

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<210> 611

<211> 1130

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (55).. (735)

<400> 611

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 Pro Val Lys Gly Gly Ser Lys Cys Ile Lys Tyr Leu Leu Phe Gly Phe

5

10

15

aac ttc atc ttc tgg ctc gct ggc att gca gtg ctt gct att gga cta 153

Asn Phe Ile Phe Trp Leu Ala Gly Ile Ala Val Leu Ala Ile Gly Leu
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 Trp Leu Arg Phe Asp Ser Gln Thr Lys Ser Ile Phe Glu Gln Glu Asn
 35 40 45
 aac cat tcc agt ttc tac aca gga gtg tac att ctg att gga gcc ggg 249
 Asn His Ser Ser Phe Tyr Thr Gly Val Tyr Ile Leu Ile Gly Ala Gly
 50 55 60 65
 gcc ctc atg atg ctg gtt ggt ttc ctg ggc tgc tgt gga gct gta caa 297
 Ala Leu Met Met Leu Val Gly Phe Leu Gly Cys Cys Gly Ala Val Gln
 70 75 80
 gag tcc cag tgc atg ctg gga ttg ttc ttc ggg ttc ctc ttg gtg ata 345
 Glu Ser Gln Cys Met Leu Gly Leu Phe Phe Gly Phe Leu Leu Val Ile
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 115 120 125
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 Leu Arg Ser Lys Asp Glu Pro Gln Arg Glu Thr Leu Lys Ala Ile His
 130 135 140 145
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 Met Ala Leu Asp Cys Cys Gly Ile Ala Gly Pro Leu Glu Gln Phe Ile
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 Ser Asp Thr Cys Pro Lys Lys Gln Leu Leu Glu Ser Phe Gln Val Lys
 165 170 175

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Pro Cys Pro Glu Ala Ile Ser Glu Val Phe Asn Asn Lys Phe His Ile
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Ile Gly Ala Val Gly Ile Gly Ile Ala Val Val Met Ile Phe Gly Met
      195              200              205
atc ttc agc atg atc ctg tgc tgc gcc atc cgc agg agc cga gaa atg 729
Ile Phe Ser Met Ile Leu Cys Cys Ala Ile Arg Arg Ser Arg Glu Met
210              215              220              225
gtc tag agtctgcccc accccgagca ggaacaacgg cctgaagac tgtccggggc 785
Val
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<210> 612

<211> 226

<212> PRT

<213> Mus musculus

<400> 612

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Leu Trp Leu Arg Phe Asp Ser Gln Thr Lys Ser Ile Phe Glu Gln Glu

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35 40 45
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 Gly Ala Leu Met Met Leu Val Gly Phe Leu Gly Cys Cys Gly Ala Val
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 Ile Phe Ala Ile Glu Ile Ala Ala Ala Val Trp Gly Tyr Thr His Lys
 100 105 110
 Asp Glu Val Ile Lys Glu Leu Gln Glu Phe Tyr Lys Asp Thr Tyr Gln
 115 120 125
 Lys Leu Arg Ser Lys Asp Glu Pro Gln Arg Glu Thr Leu Lys Ala Ile
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 165 170 175
 Lys Pro Cys Pro Glu Ala Ile Ser Glu Val Phe Asn Asn Lys Phe His
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Met Pro Glu Asn Val

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5

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10

15

20

agc gcc tac cag gac cgc gac aag cca gcc cag atc cgc ttc agc aat 272
 Ser Ala Tyr Gln Asp Arg Asp Lys Pro Ala Gln Ile Arg Phe Ser Asn

25

30

35

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40

45

50

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55

60

65

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70

75

80

85

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120	125	130	
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135	140	145	
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Leu Leu Ser Pro Met Ser Val Asn Ala Val Met Lys Val Ile Asp Pro			
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Ala Thr Ala Thr Ser Val Asp Leu Arg Asp Ile Lys Ile Val Lys Lys			
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ctt ggt ggg aca ata gat gac tgt gag ctg gtg gaa ggc ctc gtt ctc			848
Leu Gly Gly Thr Ile Asp Asp Cys Glu Leu Val Glu Gly Leu Val Leu			
215	220	225	
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Thr Gln Lys Val Ala Asn Ser Gly Ile Thr Arg Val Glu Lys Ala Lys			
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 Lys Asp Val Glu Arg Glu Asp Ile Glu Phe Ile Cys Lys Thr Ile Gly
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 Thr Lys Pro Val Ala His Ile Asp Gln Phe Thr Ala Asp Met Leu Gly
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 390 395 400 405

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 Gln Gly Glu Lys Thr Thr Gly Ile Asn Val Arg Lys Gly Gly Ile Ser
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1966

<210> 614

<211> 539

<212> PRT

<213> Mus musculus

<400> 614

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 Arg Thr Ser Leu Gly Pro Lys Gly Met Asp Lys Met Ile Gln Asp Gly
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 Lys Gly Asp Val Thr Ile Thr Asn Asp Gly Ala Thr Ile Leu Lys Gln
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 Ala Gln Asp Ile Glu Ala Gly Asp Gly Thr Thr Ser Val Val Ile Ile
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 115 120 125
 His Pro Thr Ile Ile Ser Glu Ser Phe Gln Lys Ala Leu Glu Lys Gly
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<211> 1057

<212> DNA

<213> Mus musculus

<400> 615

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<400> 616

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<211> 503

<212> DNA

<213> *Mus musculus*

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<211> 511

<212> DNA

<213> *Mus musculus*

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<211> 322

<212> DNA

<213> Mus musculus

<400> 619

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<211> 8267

<212> DNA

<213> Mus musculus

<400> 620

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<211> 532

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<213> Mus musculus

<400> 621

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<211> 562

<212> DNA

<213> Mus musculus

<400> 622

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<211> 481

<212> DNA

<213> Mus musculus

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<210> 624

<211> 2294

<212> DNA

<213> Mus musculus

<220>

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<222> (200).. (1171)

<400> 624

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Met Ala Asp Ile Asp Lys Leu Asn Ile Asp Ser

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 Ile Ile Gln Arg Leu Leu Glu Val Arg Gly Ser Lys Pro Gly Lys Asn

15

20

25

gtc cag ctc cag gag aac gag atc cga gga ctc tgc ctg aag tct cgg 328
 Val Gln Leu Gln Glu Asn Glu Ile Arg Gly Leu Cys Leu Lys Ser Arg

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Glu Ile Phe Leu Ser Gln Pro Ile Leu Leu Glu Leu Glu Ala Pro Leu			
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Lys Ile Cys Gly Asp Ile His Gly Gln Tyr Tyr Asp Leu Leu Arg Leu			
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Phe Glu Tyr Gly Gly Phe Pro Pro Glu Ser Asn Tyr Leu Phe Leu Gly			
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gac tat gtg gac agg ggc aag cag tcc ctg gag aca atc tgc ctc ttg			520
Asp Tyr Val Asp Arg Gly Lys Gln Ser Leu Glu Thr Ile Cys Leu Leu			
	95	100	105
ctg gcc tac aaa atc aag tat ccg gag aac ttc ttt ctt ctc aga ggg			568
Leu Ala Tyr Lys Ile Lys Tyr Pro Glu Asn Phe Phe Leu Leu Arg Gly			
	110	115	120
aac cac gag tgc gcc agc atc aat agg atc tac gga ttt tat gat gag			616
Asn His Glu Cys Ala Ser Ile Asn Arg Ile Tyr Gly Phe Tyr Asp Glu			
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Cys Lys Arg Arg Tyr Asn Ile Lys Leu Trp Lys Thr Phe Thr Asp Cys			
140	145	150	155
ttt aac tgc ttg ccg ata gca gcc atc gtg gac gag aag ata ttc tgc			712
Phe Asn Cys Leu Pro Ile Ala Ala Ile Val Asp Glu Lys Ile Phe Cys			
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tgt cat gga ggt tta tca cca gat ctt caa tct atg gag cag att cgg			760
Cys His Gly Gly Leu Ser Pro Asp Leu Gln Ser Met Glu Gln Ile Arg			
	175	180	185
cga att atg aga cca act gat gta cca gat caa ggt ctt ctt tgt gat			808

Arg Ile Met Arg Pro Thr Asp Val Pro Asp Gln Gly Leu Leu Cys Asp
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 Asp Arg Gly Val Ser Phe Thr Phe Gly Ala Glu Val Val Ala Lys Phe
 220 225 230 235
 ctc cat aag cat gat ttg gat ctt ata tgt aga gcc cat cag gtg gtt 952
 Leu His Lys His Asp Leu Asp Leu Ile Cys Arg Ala His Gln Val Val
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 Glu Lys Lys Lys Pro Asn Ala Thr Arg Pro Val Thr Pro Pro Arg Gly
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 Ile Val Thr Lys Gln Ala Lys Lys
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<211> 323

<212> PRT

<213> Mus musculus

<400> 625

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30

Asn Glu Ile Arg Gly Leu Cys Leu Lys Ser Arg Glu Ile Phe Leu Ser

35

40

45

Gln Pro Ile Leu Leu Glu Leu Glu Ala Pro Leu Lys Ile Cys Gly Asp
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 Gly Lys Gln Ser Leu Glu Thr Ile Cys Leu Leu Leu Ala Tyr Lys Ile
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 Lys Tyr Pro Glu Asn Phe Phe Leu Leu Arg Gly Asn His Glu Cys Ala
 115 120 125
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 Phe Thr Phe Gly Ala Glu Val Val Ala Lys Phe Leu His Lys His Asp
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Ile Cys Leu Leu Leu Ala Tyr Lys Ile Lys Tyr Pro Glu Asn Phe Phe			
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 gttggatctt actaagaaaa ctaccctc attacagtaa aaaggaactt tagaggtcga 1669
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 cctgcatigg ttttgttttt tggggttttt gttgtttgtt tgtttttaga ttcacagaac 2029
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<210> 627

<211> 327

<212> PRT

<213> Mus musculus

<400> 627

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35 40 45

Pro Ile Leu Leu Glu Leu Glu Ala Pro Leu Lys Ile Cys Gly Asp Ile

50	55	60
His Gly Gln Tyr Thr Asp Leu Leu Arg Leu Phe Glu Tyr Gly Gly Phe		
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Pro Pro Glu Ala Asn Tyr Leu Phe Leu Gly Asp Tyr Val Asp Arg Gly		80
	85	90
Lys Gln Ser Leu Glu Thr Ile Cys Leu Leu Leu Ala Tyr Lys Ile Lys		95
	100	105
Tyr Pro Glu Asn Phe Phe Leu Leu Arg Gly Asn His Glu Cys Ala Ser		110
	115	120
Ile Asn Arg Ile Tyr Gly Phe Tyr Asp Glu Cys Lys Arg Arg Phe Asn		125
	130	135
Ile Lys Leu Trp Lys Thr Phe Thr Asp Cys Phe Asn Cys Leu Pro Ile		140
145	150	155
Ala Ala Ile Val Asp Glu Lys Ile Phe Cys Cys His Gly Gly Leu Ser		160
	165	170
Pro Asp Leu Gln Ser Met Glu Gln Ile Arg Arg Ile Met Arg Pro Thr		175
	180	185
Asp Val Pro Asp Thr Gly Leu Leu Cys Asp Leu Leu Trp Ser Asp Pro		190
	195	200
Asp Lys Asp Val Gln Gly Trp Gly Glu Asn Asp Arg Gly Val Ser Phe		205
	210	215
Thr Phe Gly Ala Asp Val Val Ser Lys Phe Leu Asn Arg His Asp Leu		220
225	230	235
Asp Leu Ile Cys Arg Ala His Gln Val Val Glu Asp Gly Tyr Glu Phe		240
	245	250
Phe Ala Lys Arg Gln Leu Val Thr Leu Phe Ser Ala Pro Asn Tyr Cys		255
	260	265
Gly Glu Phe Asp Asn Ala Gly Gly Met Met Ser Val Asp Glu Thr Leu		270
	275	280
		285

Met Cys Ser Phe Gln Ile Leu Lys Pro Ser Glu Lys Lys Ala Lys Tyr
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 Gln Tyr Gly Gly Leu Asn Ser Gly Arg Pro Val Thr Pro Pro Arg Thr
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 Ala Asn Pro Pro Lys Lys Arg
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<210> 628

<211> 415

<212> DNA

<213> Mus musculus

<400> 628

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 caacagcaga gticcaggac atcaagccca tgcgggacca gatcatccgc gtgaacggta 180
 cgagcgcgta cccatgatcc tggtaggcaa caaggtaggac ttggagggtg aacgtgaggt 240
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 cggccaaaaa caaagcctca gtggatgagc tattcgacaga gatcgtgagg cagatgaact 360
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<210> 629

<211> 1179

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (807)

<400> 629

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agg ccc ttc cct gat ggc ctg gca gag gac atc gat aag ggt gag gtg	96
Arg Pro Phe Pro Asp Gly Leu Ala Glu Asp Ile Asp Lys Gly Glu Val	
20 25 30	
tct gcc cgc cag gag ctc aag gca cgt gcc cgc tac ctg gcc gaa aag	144
Ser Ala Arg Gln Glu Leu Lys Ala Arg Ala Arg Tyr Leu Ala Glu Lys	
35 40 45	
tat gag tgg gac gtt gct gaa gcc cgc aag atc tgg tgc ttt ggc cct	192
Tyr Glu Trp Asp Val Ala Glu Ala Arg Lys Ile Trp Cys Phe Gly Pro	
50 55 60	
gat ggc act ggc ccc aac att ctc acc gac atc acc aag ggt gtg cag	240
Asp Gly Thr Gly Pro Asn Ile Leu Thr Asp Ile Thr Lys Gly Val Gln	
65 70 75 80	
tac ctg aat gag atc aag gac agt gtg gtg gct ggc ttc cag tgg gct	288
Tyr Leu Asn Glu Ile Lys Asp Ser Val Val Ala Gly Phe Gln Trp Ala	
85 90 95	
act aag gag ggc gct ctc tgt gag gaa aac atg cgt ggt gtg cgg ttt	336
Thr Lys Glu Gly Ala Leu Cys Glu Glu Asn Met Arg Gly Val Arg Phe	
100 105 110	
gat gtt cat gat gtg acc ctg cat gct gat gcc att cac cgg gga ggt	384
Asp Val His Asp Val Thr Leu His Ala Asp Ala Ile His Arg Gly Gly	
115 120 125	
ggc cag atc atc ccc aca gca cgc cgc tgc ctg tat gcc agt gtg ctg	432
Gly Gln Ile Ile Pro Thr Ala Arg Arg Cys Leu Tyr Ala Ser Val Leu	
130 135 140	

acc gca cag ccc cgc ctc atg gag cct atc tat ctg gtg gag atc cag 480
 Thr Ala Gln Pro Arg Leu Met Glu Pro Ile Tyr Leu Val Glu Ile Gln
 145 150 155 160
 tgt cct gag caa gtg gtg ggt ggc atc tac ggt gtc ctg aac agg aag 528
 Cys Pro Glu Gln Val Val Gly Gly Ile Tyr Gly Val Leu Asn Arg Lys
 165 170 175
 cgt ggc cat gtg ttt gag gag tcc cag gtg gct ggt acc ccc atg ttt 576
 Arg Gly His Val Phe Glu Glu Ser Gln Val Ala Gly Thr Pro Met Phe
 180 185 190
 gtg gtc aag gca tac ctg cct gtc aat gag tcc ttt ggc ttc acc gct 624
 Val Val Lys Ala Tyr Leu Pro Val Asn Glu Ser Phe Gly Phe Thr Ala
 195 200 205
 gat ctg cga tcc aac acc ggc ggc cag gcc ttc ccc cag tgc gtg ttt 672
 Asp Leu Arg Ser Asn Thr Gly Gly Gln Ala Phe Pro Gln Cys Val Phe
 210 215 220
 gac cac tgg cag atc ctg cct ggg gat cct ttt gac aac agc agc cgc 720
 Asp His Trp Gln Ile Leu Pro Gly Asp Pro Phe Asp Asn Ser Ser Arg
 225 230 235 240
 ccc agc caa gtg gta gct gag acg cgc aac cac aac ggc ctg aaa gag 768
 Pro Ser Gln Val Val Ala Glu Thr Arg Asn His Asn Gly Leu Lys Glu
 245 250 255
 ggc atc cca gcg ctg gac aac ttc ctg gac aaa ctg tag gcagcctgat 817
 Gly Ile Pro Ala Leu Asp Asn Phe Leu Asp Lys Leu
 260 265
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<210> 630

<211> 268

<212> PRT

<213> Mus musculus

<400> 630

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			20					25					30		
Ser	Ala	Arg	Gln	Glu	Leu	Lys	Ala	Arg	Ala	Arg	Tyr	Leu	Ala	Glu	Lys
		35					40				45				
Tyr	Glu	Trp	Asp	Val	Ala	Glu	Ala	Arg	Lys	Ile	Trp	Cys	Phe	Gly	Pro
	50					55				60					
Asp	Gly	Thr	Gly	Pro	Asn	Ile	Leu	Thr	Asp	Ile	Thr	Lys	Gly	Val	Gln
65				70					75					80	
Tyr	Leu	Asn	Glu	Ile	Lys	Asp	Ser	Val	Val	Ala	Gly	Phe	Gln	Trp	Ala
				85					90				95		
Thr	Lys	Glu	Gly	Ala	Leu	Cys	Glu	Glu	Asn	Met	Arg	Gly	Val	Arg	Phe
		100					105					110			
Asp	Val	His	Asp	Val	Thr	Leu	His	Ala	Asp	Ala	Ile	His	Arg	Gly	Gly
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Gly	Gln	Ile	Ile	Pro	Thr	Ala	Arg	Arg	Cys	Leu	Tyr	Ala	Ser	Val	Leu
		130					135					140			
Thr	Ala	Gln	Pro	Arg	Leu	Met	Glu	Pro	Ile	Tyr	Leu	Val	Glu	Ile	Gln
145				150					155					160	

Cys Pro Glu Gln Val Val Gly Gly Ile Tyr Gly Val Leu Asn Arg Lys
 165 170 175
 Arg Gly His Val Phe Glu Glu Ser Gln Val Ala Gly Thr Pro Met Phe
 180 185 190
 Val Val Lys Ala Tyr Leu Pro Val Asn Glu Ser Phe Gly Phe Thr Ala
 195 200 205
 Asp Leu Arg Ser Asn Thr Gly Gly Gln Ala Phe Pro Gln Cys Val Phe
 210 215 220
 Asp His Trp Gln Ile Leu Pro Gly Asp Pro Phe Asp Asn Ser Ser Arg
 225 230 235 240
 Pro Ser Gln Val Val Ala Glu Thr Arg Asn His Asn Gly Leu Lys Glu
 245 250 255
 Gly Ile Pro Ala Leu Asp Asn Phe Leu Asp Lys Leu
 260 265

<210> 631

<211> 710

<212> DNA

<213> Mus musculus

<400> 631

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 cttcttttcc tcaggtacca caggagagga ggttatgact tggaaagtga agagaaagtg 180
 aagtgggcg tggctagctc ccactgagga ggacctgagc tataggtaag actccatcct 240
 taatcctggg cagcatgggc agacaagcca aggcatgggt gggctctggg tctgcttcag 300
 taagtgtctg attgtcttgt ttaggggtag cagggggcag gttactactg tgccgatctg 360
 agttccaatt cagaagcigt ttccagagac tctggctagg tcacaagggt gcggcaccca 420
 cagctcccct tctaatgct ccttgcatgt cgtaaagctt agaccagct tcaaagcct 480

ccitctttat gcttcaggaa ccttcagagg ctacttctga gacagtgggt cgttacacgt 540
 tctacataga ggagaaatat ttcaccagca gccatgaaaa cgtcttcatt catttccagt 600
 tgctacccig actgggcctc ctgtaattgc tctgttaaaa gaaaaaaaaa atctcagagc 660
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<210> 632

<211> 449

<212> DNA

<213> Mus musculus

<400> 632

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 gacaagttca gtgcgatgaa gtacgagcag ggcacgggct gttggcaggg cccaaccgat 180
 ccaccacagt gccctgctgt gtggcaaaga gactgtgggt accagcacca cggagcccag 240
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 agcaccacgt gatggggacc atgacgagct gtagcctgaa cctcaaggcc tgcaaccagt 360
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<210> 633

<211> 1710

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (108).. (1052)

<400> 633

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Met Ala Gly
1
ccc cag gcc ctc gcg ttc ggg ctc ctg ctc gcg gtg gtc aca gcg acg 164
Pro Gln Ala Leu Ala Phe Gly Leu Leu Leu Ala Val Val Thr Ala Thr
5 10 15
ctg gcc gcg gct cag aga gac tgt gtc tgt gac aac tac aag ctg gca 212
Leu Ala Ala Ala Gln Arg Asp Cys Val Cys Asp Asn Tyr Lys Leu Ala
20 25 30 35
aca agt tgc tct ctg aat gaa tat ggt gaa tgc cag tgt act tcc tat 260
Thr Ser Cys Ser Leu Asn Glu Tyr Gly Glu Cys Gln Cys Thr Ser Tyr
40 45 50
ggt aca cag aat act gtc att tgc tcc aaa ctg gcg tct aaa tgc ttg 308
Gly Thr Gln Asn Thr Val Ile Cys Ser Lys Leu Ala Ser Lys Cys Leu
55 60 65
gcg atg aaa gca gaa atg act cac agc aag tct ggg agg agg ata aag 356
Ala Met Lys Ala Glu Met Thr His Ser Lys Ser Gly Arg Arg Ile Lys
70 75 80
ccc gaa ggc atc cag aac aac gat ggg ctg tac gac ccc gac tgc gac 404
Pro Glu Gly Ile Gln Asn Asn Asp Gly Leu Tyr Asp Pro Asp Cys Asp
85 90 95
gag cag ggg ctc ttc aaa gcc aag cag tgc aac ggc acc gcc acg tgc 452
Glu Gln Gly Leu Phe Lys Ala Lys Gln Cys Asn Gly Thr Ala Thr Cys
100 105 110 115
tgg tgt gtc aac acc gcc gga gtc cga aga acc gac aag gac acg gag 500
Trp Cys Val Asn Thr Ala Gly Val Arg Arg Thr Asp Lys Asp Thr Glu
120 125 130

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atc acg tgc tcc gag cgc gtg agg acc tac tgg atc atc att gaa cta 548
 Ile Thr Cys Ser Glu Arg Val Arg Thr Tyr Trp Ile Ile Ile Glu Leu
 135 140 145
 aaa cac aaa gaa aga gaa agc ccc tac gac cat cag agc ttg cag act 596
 Lys His Lys Glu Arg Glu Ser Pro Tyr Asp His Gln Ser Leu Gln Thr
 150 155 160
 gcg ctt caa gag gcg ttc aca tct cga tat aag ctg aat cag aaa ttt 644
 Ala Leu Gln Glu Ala Phe Thr Ser Arg Tyr Lys Leu Asn Gln Lys Phe
 165 170 175
 atc aaa aac att atg tat gag aat aat gtt atc acc att gat ctg atg 692
 Ile Lys Asn Ile Met Tyr Glu Asn Asn Val Ile Thr Ile Asp Leu Met
 180 185 190 195
 caa aac tct tct cag aaa aca caa gac gac gtg gac ata gct gat gtg 740
 Gln Asn Ser Ser Gln Lys Thr Gln Asp Asp Val Asp Ile Ala Asp Val
 200 205 210
 gct tac tat ttt gaa aaa gat gtg aag ggg gag tcc ctg ttc cat tct 788
 Ala Tyr Tyr Phe Glu Lys Asp Val Lys Gly Glu Ser Leu Phe His Ser
 215 220 225
 tct aag agc atg gac ctg aga gtg aac gga gag ccg ctc gat ctg gac 836
 Ser Lys Ser Met Asp Leu Arg Val Asn Gly Glu Pro Leu Asp Leu Asp
 230 235 240
 ccc ggg cag act ctg att tac tac gtt gat gaa aag gca ccc gag ttc 884
 Pro Gly Gln Thr Leu Ile Tyr Tyr Val Asp Glu Lys Ala Pro Glu Phe
 245 250 255
 tcc atg cag ggc ctc acg gcc ggg atc atc gct gtc att gtg gtg gtg 932
 Ser Met Gln Gly Leu Thr Ala Gly Ile Ile Ala Val Ile Val Val Val
 260 265 270 275
 tca tta gca gtc atc gcg ggg att gtt gtc ctg gtt ata tct aca agg 980
 Ser Leu Ala Val Ile Ala Gly Ile Val Val Leu Val Ile Ser Thr Arg

280	285	290	
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Lys Lys Ser Ala Lys Tyr Glu Lys Ala Glu Ile Lys Glu Met Gly Glu			
295	300	305	
atc cac aga gag ctt aat gcc tag ccgtgctgag tgc tgaactg aggaggggcc			1082
Ile His Arg Glu Leu Asn Ala			
310	315		
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<210> 634

<211> 314

<212> PRT

<213> Mus musculus

<400> 634

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15

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20

25

30

Lys Leu Ala Thr Ser Cys Ser Leu Asn Glu Tyr Gly Glu Cys Gln Cys
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 Lys Cys Leu Ala Met Lys Ala Glu Met Thr His Ser Lys Ser Gly Arg
 65 70 75 80
 Arg Ile Lys Pro Glu Gly Ile Gln Asn Asn Asp Gly Leu Tyr Asp Pro
 85 90 95
 Asp Cys Asp Glu Gln Gly Leu Phe Lys Ala Lys Gln Cys Asn Gly Thr
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 Ala Thr Cys Trp Cys Val Asn Thr Ala Gly Val Arg Arg Thr Asp Lys
 115 120 125
 Asp Thr Glu Ile Thr Cys Ser Glu Arg Val Arg Thr Tyr Trp Ile Ile
 130 135 140
 Ile Glu Leu Lys His Lys Glu Arg Glu Ser Pro Tyr Asp His Gln Ser
 145 150 155 160
 Leu Gln Thr Ala Leu Gln Glu Ala Phe Thr Ser Arg Tyr Lys Leu Asn
 165 170 175
 Gln Lys Phe Ile Lys Asn Ile Met Tyr Glu Asn Asn Val Ile Thr Ile
 180 185 190
 Asp Leu Met Gln Asn Ser Ser Gln Lys Thr Gln Asp Asp Val Asp Ile
 195 200 205
 Ala Asp Val Ala Tyr Tyr Phe Glu Lys Asp Val Lys Gly Glu Ser Leu
 210 215 220
 Phe His Ser Ser Lys Ser Met Asp Leu Arg Val Asn Gly Glu Pro Leu
 225 230 235 240
 Asp Leu Asp Pro Gly Gln Thr Leu Ile Tyr Tyr Val Asp Glu Lys Ala
 245 250 255
 Pro Glu Phe Ser Met Gln Gly Leu Thr Ala Gly Ile Ile Ala Val Ile

260 265 270
 Val Val Val Ser Leu Ala Val Ile Ala Gly Ile Val Val Leu Val Ile
 275 280 285
 Ser Thr Arg Lys Lys Ser Ala Lys Tyr Glu Lys Ala Glu Ile Lys Glu
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 Met Gly Glu Ile His Arg Glu Leu Asn Ala
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<210> 635

<211> 122

<212> DNA

<213> Mus musculus

<400> 635

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<210> 636

<211> 499

<212> DNA

<213> Mus musculus

<400> 636

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cttcgcccc cctgtggacc gccagcccc cacgtacagc aacatggagg aggtcgatta 360
gcaggtcctt ggctgatgga gggactgggt ttgggaggtc cctacagagg gccatctctg 420
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atgatttgag ggtgggaac 499

<210> 637

<211> 386

<212> DNA

<213> Mus musculus

<400> 637

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ctctgcagct taaagaaaat cccaaggica tgtgactcca gatacttctg ggaatggttg 240
aatacagtgt ttaataaagt agattatgaa cgcctcaggg atgttggccc tgacaggcga 300
gcatctgagt ggctacttctg gtgtggagcc aaagtacgt actgtggcca ccagaagtgg 360
ctacacgact ataacacact cccagg 386

<210> 638

<211> 526

<212> DNA

<213> Mus musculus

<400> 638

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gaagcatcat cagcatcacc accagcagca ccatcagcag caacagcagc agcagcagca 240

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 gactattgac ctgaagaatt ttaggaaacc aggagagaag acctttacac agcgtacgcg 360
 tctctttgtg ggcaatcttc cccctgatat cactgaggag gaaatgagga aactaattga 420
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<210> 639

<211> 476

<212> DNA

<213> Mus musculus

<400> 639

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 cggtaaagca gatggggcga tgcaaggcag ctgaatagga gcttctcctg cagcccaggc 180
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<210> 640

<211> 3015

<212> DNA

<213> Mus musculus

<400> 640

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cttttcatga ttgggctcgt ticcctttgc tctcttccca ggcttctgag attagaccct 180
ggatagagcc cgtcctgtcc tcaaaagica gttgggcctt catgccccaa ctgttctgtc 240
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<400> 644

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 Asp Asp His Asp Ser Val Asp Lys Ile Val Ile Gln Lys Tyr His Thr

155	160	165	
gtg aat ggc cac aac tgt gaa gta aga aag gct ctg tcg aag caa gag	579		
Val Asn Gly His Asn Cys Glu Val Arg Lys Ala Leu Ser Lys Gln Glu			
170	175	180	185
atg gct agt gct tca tcc agt cag aga ggt cgc agt ggt tct gga aac	627		
Met Ala Ser Ala Ser Ser Ser Gln Arg Gly Arg Ser Gly Ser Gly Asn			
190	195	200	
ttt ggt ggt ggt cgt gga ggc ggt ttt ggt ggc aat gac aat ttt ggt	675		
Phe Gly Gly Gly Arg Gly Gly Gly Phe Gly Gly Asn Asp Asn Phe Gly			
205	210	215	
cga gga ggg aac ttc agt ggt cgt ggt ggc ttt ggt ggc agc cgt ggt	723		
Arg Gly Gly Asn Phe Ser Gly Arg Gly Gly Phe Gly Gly Ser Arg Gly			
220	225	230	
ggt ggt gga tat ggt ggc agt ggg gat ggc tat aat gga ttt ggc aat	771		
Gly Gly Gly Tyr Gly Gly Ser Gly Asp Gly Tyr Asn Gly Phe Gly Asn			
235	240	245	
gat gga agc aat ttt gga ggt ggt gga agc tac aat gat ttt ggc aat	819		
Asp Gly Ser Asn Phe Gly Gly Gly Gly Ser Tyr Asn Asp Phe Gly Asn			
250	255	260	265
tac aac aat cag tct tcc aat ttt ggg ccg atg aag gga gga aac ttt	867		
Tyr Asn Asn Gln Ser Ser Asn Phe Gly Pro Met Lys Gly Gly Asn Phe			
270	275	280	
gga ggc agg agc tct ggc cct tat ggt ggt gga ggc cag tac ttt gct	915		
Gly Gly Arg Ser Ser Gly Pro Tyr Gly Gly Gly Gly Gln Tyr Phe Ala			
285	290	295	
aaa cca cgg aac caa ggt ggc tat ggc ggt tcc agc agc agc agt agc	963		
Lys Pro Arg Asn Gln Gly Gly Tyr Gly Gly Ser Ser Ser Ser Ser			
300	305	310	
tat ggc agt ggc agg agg ttc taa ttacatacag ccaggaaaca aagcttagca	1017		

Tyr Gly Ser Gly Arg Arg Phe

315

320

ggagaggaga gccagagaag tgacaggga gctacagggtt acaacagatt tgtgaactca 1077
 gccaa gcaca gtggtggcag ggcctagctg ctacaaagaa gacatgtttt agacaatact 1137
 catgtgtgtg ggcaaaaact ccaggactgt atttgtgact aattgtataa caggttattt 1197
 tagtttctgt tctgtggaaa gtgtaaagca ttccaacaaa aggttttact gtagaccttt 1257
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 gtaaacctcc ccaacagtgt gaagttagaa ttccctcagg gtggcgccaa gtccatttg 1437
 gaattttatt atggttgctt ggggtggagaa gccattgtct tcaaaaacct tgaatgtgt 1497
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 aaggtcaciaa ttgtgttata aaatggtgt tggcacaccc tatgcaatat caaaattgaa 1617
 taacggtatc agataaaata acagatggga atgaagctta tgtatccatt atcatgtgta 1677
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<210> 645

<211> 320

<212> PRT

<213> Mus musculus

<400> 645

Met Ser Lys Ser Glu Ser Pro Lys Glu Pro Glu Gln Leu Arg Lys Leu
 1 5 10 15
 Phe Ile Gly Gly Leu Ser Phe Glu Thr Thr Asp Glu Ser Leu Arg Ser
 20 25 30
 His Phe Glu Gln Trp Gly Thr Leu Thr Asp Cys Val Val Met Arg Asp
 35 40 45
 Pro Asn Thr Lys Arg Ser Arg Gly Phe Gly Phe Val Thr Tyr Ala Thr
 50 55 60

Val Glu Glu Val Asp Ala Ala Met Asn Ala Arg Pro His Lys Val Asp
 65 70 75 80
 Gly Arg Val Val Glu Pro Lys Arg Ala Val Ser Arg Glu Asp Ser Gln
 85 90 95
 Arg Pro Gly Ala His Leu Thr Val Lys Lys Ile Phe Val Gly Gly Ile
 100 105 110
 Lys Glu Asp Thr Glu Glu His His Leu Arg Asp Tyr Phe Glu Gln Tyr
 115 120 125
 Gly Lys Ile Glu Val Ile Glu Ile Met Thr Asp Arg Gly Ser Gly Lys
 130 135 140
 Lys Arg Gly Phe Ala Phe Val Thr Phe Asp Asp His Asp Ser Val Asp
 145 150 155 160
 Lys Ile Val Ile Gln Lys Tyr His Thr Val Asn Gly His Asn Cys Glu
 165 170 175
 Val Arg Lys Ala Leu Ser Lys Gln Glu Met Ala Ser Ala Ser Ser Ser
 180 185 190
 Gln Arg Gly Arg Ser Gly Ser Gly Asn Phe Gly Gly Gly Arg Gly Gly
 195 200 205
 Gly Phe Gly Gly Asn Asp Asn Phe Gly Arg Gly Gly Asn Phe Ser Gly
 210 215 220
 Arg Gly Gly Phe Gly Gly Ser Arg Gly Gly Gly Gly Tyr Gly Gly Ser
 225 230 235 240
 Gly Asp Gly Tyr Asn Gly Phe Gly Asn Asp Gly Ser Asn Phe Gly Gly
 245 250 255
 Gly Gly Ser Tyr Asn Asp Phe Gly Asn Tyr Asn Asn Gln Ser Ser Asn
 260 265 270
 Phe Gly Pro Met Lys Gly Gly Asn Phe Gly Gly Arg Ser Ser Gly Pro
 275 280 285
 Tyr Gly Gly Gly Gly Gln Tyr Phe Ala Lys Pro Arg Asn Gln Gly Gly

290 295 300
 Tyr Gly Gly Ser Ser Ser Ser Ser Ser Tyr Gly Ser Gly Arg Arg Phe
 305 310 315 320

<210> 646

<211> 912

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (912)

<400> 646

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 Met Ala Ala Thr Arg Tyr Glu Pro Val Ala Glu Ile Gly Val Gly Ala
 1 5 10 15
 tat ggg acg gtg tac aaa gcc cga gat ccc cac agt ggc cac ttt gtg 96
 Tyr Gly Thr Val Tyr Lys Ala Arg Asp Pro His Ser Gly His Phe Val
 20 25 30
 gcc ctc aag agt gtg aga gtt cct aat gga gga gca gct gga ggg ggc 144
 Ala Leu Lys Ser Val Arg Val Pro Asn Gly Gly Ala Ala Gly Gly Gly
 35 40 45
 ctt ccc gtc agc aca gtt cgt gag gtg gcc ttg tta agg agg ctg gag 192
 Leu Pro Val Ser Thr Val Arg Glu Val Ala Leu Leu Arg Arg Leu Glu
 50 55 60
 gcc ttt gaa cat ccc aat gtt gta cgg ctg atg gat gtc tgt gct act 240
 Ala Phe Glu His Pro Asn Val Val Arg Leu Met Asp Val Cys Ala Thr
 65 70 75 80

tcc cga act gat cgg gac atc aag gtc acc cta gtg ttt gag cat ata	288
Ser Arg Thr Asp Arg Asp Ile Lys Val Thr Leu Val Phe Glu His Ile	
85 90 95	
gac cag gac ctg agg aca tac ctg gac aaa gca cct cca ccg ggc ctg	336
Asp Gln Asp Leu Arg Thr Tyr Leu Asp Lys Ala Pro Pro Pro Gly Leu	
100 105 110	
ccg gtt gag acc att aag gat cta atg cgt cag ttt cta agc ggc ctg	384
Pro Val Glu Thr Ile Lys Asp Leu Met Arg Gln Phe Leu Ser Gly Leu	
115 120 125	
gat ttt ctt cat gca aac tgc att gtt cac cgg gac ctg aag cca gag	432
Asp Phe Leu His Ala Asn Cys Ile Val His Arg Asp Leu Lys Pro Glu	
130 135 140	
aac att cta gtg aca agt aat ggg acc gtc aag ctg gct gac ttt ggc	480
Asn Ile Leu Val Thr Ser Asn Gly Thr Val Lys Leu Ala Asp Phe Gly	
145 150 155 160	
cta gct aga atc tac agc tac cag atg gcc ctc acg cct gtg gtg gtt	528
Leu Ala Arg Ile Tyr Ser Tyr Gln Met Ala Leu Thr Pro Val Val Val	
165 170 175	
acg ctc tgg tac cga gct cct gaa gtt ctt ctg cag tct aca tac gca	576
Thr Leu Trp Tyr Arg Ala Pro Glu Val Leu Leu Gln Ser Thr Tyr Ala	
180 185 190	
aca ccc gtg gac atg tgg agc gtt ggc tgt atc ttt gca gag atg ttc	624
Thr Pro Val Asp Met Trp Ser Val Gly Cys Ile Phe Ala Glu Met Phe	
195 200 205	
cgt cgg aag cct ctc ttc tgt gga aac tct gaa gcc gac cag ttg ggg	672
Arg Arg Lys Pro Leu Phe Cys Gly Asn Ser Glu Ala Asp Gln Leu Gly	
210 215 220	
aaa atc ttt gat ctc att gga ttg cct cca gaa gac gac tgg cct cga	720
Lys Ile Phe Asp Leu Ile Gly Leu Pro Pro Glu Asp Asp Trp Pro Arg	

225	230	235	240	
gag gta tct cta cct cga gga gcc ttt gcc ccc aga ggg cct cgg cca				768
Glu Val Ser Leu Pro Arg Gly Ala Phe Ala Pro Arg Gly Pro Arg Pro				
	245	250	255	
gtg cag tca gtg gtg cca gag atg gag gag tct gga gcg cag ctg cta				816
Val Gln Ser Val Val Pro Glu Met Glu Glu Ser Gly Ala Gln Leu Leu				
	260	265	270	
ctg gaa atg ctg acc ttt aac cca cat aag cga atc tct gcc ttc cga				864
Leu Glu Met Leu Thr Phe Asn Pro His Lys Arg Ile Ser Ala Phe Arg				
	275	280	285	
gcc ctg cag cac tcc tac ctg cac aag gag gaa agc gac gca gag tga				912
Ala Leu Gln His Ser Tyr Leu His Lys Glu Glu Ser Asp Ala Glu				
290	295	300		

<210> 647

<211> 303

<212> PRT

<213> Mus musculus

<400> 647

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20	25	30	
Ala Leu Lys Ser Val Arg Val Pro Asn Gly Gly Ala Ala Gly Gly Gly			
35	40	45	
Leu Pro Val Ser Thr Val Arg Glu Val Ala Leu Leu Arg Arg Leu Glu			
50	55	60	
Ala Phe Glu His Pro Asn Val Val Arg Leu Met Asp Val Cys Ala Thr			

65	70	75	80
Ser Arg Thr Asp Arg Asp Ile Lys Val Thr Leu Val Phe Glu His Ile			
85	90	95	
Asp Gln Asp Leu Arg Thr Tyr Leu Asp Lys Ala Pro Pro Pro Gly Leu			
100	105	110	
Pro Val Glu Thr Ile Lys Asp Leu Met Arg Gln Phe Leu Ser Gly Leu			
115	120	125	
Asp Phe Leu His Ala Asn Cys Ile Val His Arg Asp Leu Lys Pro Glu			
130	135	140	
Asn Ile Leu Val Thr Ser Asn Gly Thr Val Lys Leu Ala Asp Phe Gly			
145	150	155	160
Leu Ala Arg Ile Tyr Ser Tyr Gln Met Ala Leu Thr Pro Val Val Val			
165	170	175	
Thr Leu Trp Tyr Arg Ala Pro Glu Val Leu Leu Gln Ser Thr Tyr Ala			
180	185	190	
Thr Pro Val Asp Met Trp Ser Val Gly Cys Ile Phe Ala Glu Met Phe			
195	200	205	
Arg Arg Lys Pro Leu Phe Cys Gly Asn Ser Glu Ala Asp Gln Leu Gly			
210	215	220	
Lys Ile Phe Asp Leu Ile Gly Leu Pro Pro Glu Asp Asp Trp Pro Arg			
225	230	235	240
Glu Val Ser Leu Pro Arg Gly Ala Phe Ala Pro Arg Gly Pro Arg Pro			
245	250	255	
Val Gln Ser Val Val Pro Glu Met Glu Glu Ser Gly Ala Gln Leu Leu			
260	265	270	
Leu Glu Met Leu Thr Phe Asn Pro His Lys Arg Ile Ser Ala Phe Arg			
275	280	285	
Ala Leu Gln His Ser Tyr Leu His Lys Glu Glu Ser Asp Ala Glu			
290	295	300	

<210> 648

<211> 4074

<212> DNA

<213> *Mus musculus*

<400> 648

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gccaagtittg tgctccgaga catggcgact gacaacagca aggtggctga tgggcagatc 180
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<210> 649

<211> 2511

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (1212)

<400> 649

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 cct gcc agg gtg gac ttc tcc ctg gcc ggg gcg ctc aat gct ggc ttc 96
 Pro Ala Arg Val Asp Phe Ser Leu Ala Gly Ala Leu Asn Ala Gly Phe
 20 25 30
 aag gag aca cgg gcg agc gag cgt gca gag atg atg gag ctc aat gac 144
 Lys Glu Thr Arg Ala Ser Glu Arg Ala Glu Met Met Glu Leu Asn Asp
 35 40 45
 cgc ttt gct agc tac atc gag aag gtc cgc ttc ctg gaa cag caa aac 192
 Arg Phe Ala Ser Tyr Ile Glu Lys Val Arg Phe Leu Glu Gln Gln Asn
 50 55 60
 aag gcg ctg gca gct gaa ctg aac cag ctt cga gcc aag gag ccc acc 240
 Lys Ala Leu Ala Ala Glu Leu Asn Gln Leu Arg Ala Lys Glu Pro Thr
 65 70 75 80
 aaa ctg gct gat gtc tac cag gcg gag ctt cgg gag ctg cgg ctg cgg 288
 Lys Leu Ala Asp Val Tyr Gln Ala Glu Leu Arg Glu Leu Arg Leu Arg
 85 90 95
 ctg gac cag ctt acg gcc aac agt gcc cgg ctg gag gtg gag agg gac 336
 Leu Asp Gln Leu Thr Ala Asn Ser Ala Arg Leu Glu Val Glu Arg Asp
 100 105 110
 aac ttt gca cag gac ctc ggc acc ctg agg cag aag ctc caa gat gaa 384
 Asn Phe Ala Gln Asp Leu Gly Thr Leu Arg Gln Lys Leu Gln Asp Glu
 115 120 125
 acc aac ctg agg ctg gag gca gag aac aac ctg gct gcg tat aga cag 432
 Thr Asn Leu Arg Leu Glu Ala Glu Asn Asn Leu Ala Ala Tyr Arg Gln
 130 135 140
 gag gca cat gaa gcc acc ctg gct cgt gtg gat ttg gag aga aag gtt 480
 Glu Ala His Glu Ala Thr Leu Ala Arg Val Asp Leu Glu Arg Lys Val
 145 150 155 160

gaa tcg ctg gag gag gag atc cag ttc tta agg aag atc tat gag gag 528
 Glu Ser Leu Glu Glu Glu Ile Gln Phe Leu Arg Lys Ile Tyr Glu Glu
 165 170 175
 gaa gtt cga gat ctc cgg gag cag ctg gcc caa cag cag gtc cac gtg 576
 Glu Val Arg Asp Leu Arg Glu Gln Leu Ala Gln Gln Gln Val His Val
 180 185 190
 gag atg gat gtg gcc aag cca gac ctc aca gcg gcc ctg aga gag att 624
 Glu Met Asp Val Ala Lys Pro Asp Leu Thr Ala Ala Leu Arg Glu Ile
 195 200 205
 cgc act caa tac gag gca gtg gcc acc agt aac atg caa gag aca gag 672
 Arg Thr Gln Tyr Glu Ala Val Ala Thr Ser Asn Met Gln Glu Thr Glu
 210 215 220
 gag tgg tat cgg tct aag ttt gca gac ctc aca gac gct gcg tcc cgc 720
 Glu Trp Tyr Arg Ser Lys Phe Ala Asp Leu Thr Asp Ala Ala Ser Arg
 225 230 235 240
 aac gca gag ctc ctc cgc caa gcc aaa cac gaa gct aac gac tat cgc 768
 Asn Ala Glu Leu Leu Arg Gln Ala Lys His Glu Ala Asn Asp Tyr Arg
 245 250 255
 cgc caa ctg cag gcc ttg acc tgc gat ctg gag tcc ctc cgc ggc acg 816
 Arg Gln Leu Gln Ala Leu Thr Cys Asp Leu Glu Ser Leu Arg Gly Thr
 260 265 270
 aac gag tcc cta gag cgg caa atg cgc gaa cag gaa gag cgc cat gcg 864
 Asn Glu Ser Leu Glu Arg Gln Met Arg Glu Gln Glu Glu Arg His Ala
 275 280 285
 cgg gag tcg gcc agt tac cag gag gca ctt gct cgg ctg gag gag gag 912
 Arg Glu Ser Ala Ser Tyr Gln Glu Ala Leu Ala Arg Leu Glu Glu Glu
 290 295 300
 ggc caa agc ctc aag gag gag atg gcc cgc cac ctg cag gag tac cag 960
 Gly Gln Ser Leu Lys Glu Glu Met Ala Arg His Leu Gln Glu Tyr Gln

305 310 315 320
 gat cta ctc aac gtt aag cta gcc ctg gac atc gag atc gcc acc tac 1008
 Asp Leu Leu Asn Val Lys Leu Ala Leu Asp Ile Glu Ile Ala Thr Tyr
 325 330 335
 agg aaa ttg ctg gag ggc gaa gaa aac cgc atc acc att cct gta cag 1056
 Arg Lys Leu Leu Glu Gly Glu Glu Asn Arg Ile Thr Ile Pro Val Gln
 340 345 350
 act ttc tcc aac ctc cag atc cga gaa acc agc ctg gac acc aaa tcc 1104
 Thr Phe Ser Asn Leu Gln Ile Arg Glu Thr Ser Leu Asp Thr Lys Ser
 355 360 365
 gtg tca gaa ggc cac ctc aag agg aac atc gtg gta aag act gtg gag 1152
 Val Ser Glu Gly His Leu Lys Arg Asn Ile Val Val Lys Thr Val Glu
 370 375 380
 atg cgg gat ggt gag gtc att aag gac tcg aag cag gag cac aag gac 1200
 Met Arg Asp Gly Glu Val Ile Lys Asp Ser Lys Gln Glu His Lys Asp
 385 390 395 400
 gtg gtg atg tga ggtgtgccac ctggtggccc ttgccaatgca gtgtgagggc 1252
 Val Val Met
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<210> 650

<211> 403

<212> PRT

<213> *Mus musculus*

<400> 650

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Pro	Ala	Arg	Val	Asp	Phe	Ser	Leu	Ala	Gly	Ala	Leu	Asn	Ala	Gly	Phe
				20						25				30	
Lys	Glu	Thr	Arg	Ala	Ser	Glu	Arg	Ala	Glu	Met	Met	Glu	Leu	Asn	Asp
				35				40					45		
Arg	Phe	Ala	Ser	Tyr	Ile	Glu	Lys	Val	Arg	Phe	Leu	Glu	Gln	Gln	Asn
				50				55				60			
Lys	Ala	Leu	Ala	Ala	Glu	Leu	Asn	Gln	Leu	Arg	Ala	Lys	Glu	Pro	Thr
				65				70				75			80
Lys	Leu	Ala	Asp	Val	Tyr	Gln	Ala	Glu	Leu	Arg	Glu	Leu	Arg	Leu	Arg
				85						90				95	

Leu Asp Gln Leu Thr Ala Asn Ser Ala Arg Leu Glu Val Glu Arg Asp
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 Asn Phe Ala Gln Asp Leu Gly Thr Leu Arg Gln Lys Leu Gln Asp Glu
 115 120 125
 Thr Asn Leu Arg Leu Glu Ala Glu Asn Asn Leu Ala Ala Tyr Arg Gln
 130 135 140
 Glu Ala His Glu Ala Thr Leu Ala Arg Val Asp Leu Glu Arg Lys Val
 145 150 155 160
 Glu Ser Leu Glu Glu Glu Ile Gln Phe Leu Arg Lys Ile Tyr Glu Glu
 165 170 175
 Glu Val Arg Asp Leu Arg Glu Gln Leu Ala Gln Gln Gln Val His Val
 180 185 190
 Glu Met Asp Val Ala Lys Pro Asp Leu Thr Ala Ala Leu Arg Glu Ile
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 Arg Thr Gln Tyr Glu Ala Val Ala Thr Ser Asn Met Gln Glu Thr Glu
 210 215 220
 Glu Trp Tyr Arg Ser Lys Phe Ala Asp Leu Thr Asp Ala Ala Ser Arg
 225 230 235 240
 Asn Ala Glu Leu Leu Arg Gln Ala Lys His Glu Ala Asn Asp Tyr Arg
 245 250 255
 Arg Gln Leu Gln Ala Leu Thr Cys Asp Leu Glu Ser Leu Arg Gly Thr
 260 265 270
 Asn Glu Ser Leu Glu Arg Gln Met Arg Glu Gln Glu Glu Arg His Ala
 275 280 285
 Arg Glu Ser Ala Ser Tyr Gln Glu Ala Leu Ala Arg Leu Glu Glu Glu
 290 295 300
 Gly Gln Ser Leu Lys Glu Glu Met Ala Arg His Leu Gln Glu Tyr Gln
 305 310 315 320
 Asp Leu Leu Asn Val Lys Leu Ala Leu Asp Ile Glu Ile Ala Thr Tyr

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Arg	Lys	Leu	Leu	Glu	Gly	Glu	Glu	Asn	Arg	Ile	Thr	Ile	Pro	Val	Gln
	340		345		350										
Thr	Phe	Ser	Asn	Leu	Gln	Ile	Arg	Glu	Thr	Ser	Leu	Asp	Thr	Lys	Ser
	355		360		365										
Val	Ser	Glu	Gly	His	Leu	Lys	Arg	Asn	Ile	Val	Val	Lys	Thr	Val	Glu
	370		375		380										
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<210> 651

<211> 2544

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (190).. (1668)

<400> 651

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 gcatagttaac agcgcgtccg ttctccgtct cgcagccggc acagctagag cttcgagcgc 180
 agcgcggccc atg gat ccc agc agc aag aag gtg acg ggc cgc ctc atg ttg 231

Met Asp Pro Ser Ser Lys Lys Val Thr Gly Arg Leu Met Leu

1

5

10

gct gtg gga gga gca gtg ctc gga tca ctg cag ttc ggc tat aac act 279
 Ala Val Gly Gly Ala Val Leu Gly Ser Leu Gln Phe Gly Tyr Asn Thr

15	20	25	30	
ggt gtc atc aac gcc ccc cag aag gtt att gag gag ttc tac aat caa	327			
Gly Val Ile Asn Ala Pro Gln Lys Val Ile Glu Glu Phe Tyr Asn Gln				
35	40	45		
aca tgg aac cac cgc atc gga gag ccc atc cca tcc acc aca ctc acc	375			
Thr Trp Asn His Arg Ile Gly Glu Pro Ile Pro Ser Thr Thr Leu Thr				
50	55	60		
acg ctt tgg tct ctc tcc gtg gcc atc ttc tct gtc ggg ggc atg att	423			
Thr Leu Trp Ser Leu Ser Val Ala Ile Phe Ser Val Gly Gly Met Ile				
65	70	75		
ggt tcc ttc tct gtc ggc ctc ttt gtt aat cgc ttt ggc agg cgg aac	471			
Gly Ser Phe Ser Val Gly Leu Phe Val Asn Arg Phe Gly Arg Arg Asn				
80	85	90		
tcc atg ctg atg atg aac ctg ttg gcc ttt gtg gct gct gtg ctt atg	519			
Ser Met Leu Met Met Asn Leu Leu Ala Phe Val Ala Ala Val Leu Met				
95	100	105	110	
ggc ttc tcc aaa ctg ggc aag tcc ttt gag atg ctg atc ctg ggc cgc	567			
Gly Phe Ser Lys Leu Gly Lys Ser Phe Glu Met Leu Ile Leu Gly Arg				
115	120	125		
ttc atc atc ggt gtg tac tgc ggc ctg act act ggc ttt gtg ccc atg	615			
Phe Ile Ile Gly Val Tyr Cys Gly Leu Thr Thr Gly Phe Val Pro Met				
130	135	140		
tat gtg gga gag gtg tca cct aca gct cta cgt gga gcc cta ggc aca	663			
Tyr Val Gly Glu Val Ser Pro Thr Ala Leu Arg Gly Ala Leu Gly Thr				
145	150	155		
ctg cac cag ctg gga atc gtc gtt ggc atc ctt att gcc cag gtg ttt	711			
Leu His Gln Leu Gly Ile Val Val Gly Ile Leu Ile Ala Gln Val Phe				
160	165	170		
ggc tta gac tcc atc atg ggc aat gca gac ttg tgg cct ctg ctg ctc	759			

Gly Leu Asp Ser Ile Met Gly Asn Ala Asp Leu Trp Pro Leu Leu Leu
 175 180 185 190
 agt gtc gtc ttc gtc cca gcc ctg cta cag tgt atc ctg ttg ccc ttc 807
 Ser Val Val Phe Val Pro Ala Leu Leu Gln Cys Ile Leu Leu Pro Phe
 195 200 205
 tgc ccc gag agc ccc cgc ttc ctg ctc atc aat cgt aac gag gag aac 855
 Cys Pro Glu Ser Pro Arg Phe Leu Leu Ile Asn Arg Asn Glu Glu Asn
 210 215 220
 cgg gcc aag agt gtg ctg aag aag ctt cga ggg aca gcc gat gtg acc 903
 Arg Ala Lys Ser Val Leu Lys Lys Leu Arg Gly Thr Ala Asp Val Thr
 225 230 235
 cga gac ctg cag gag atg aaa gaa gag ggt cgg cag atg atg cgg gag 951
 Arg Asp Leu Gln Glu Met Lys Glu Glu Gly Arg Gln Met Met Arg Glu
 240 245 250
 aag aag gtc acc atc ttg gag ctg ttc cgc tca ccc gcc tac cgc cag 999
 Lys Lys Val Thr Ile Leu Glu Leu Phe Arg Ser Pro Ala Tyr Arg Gln
 255 260 265 270
 ccc atc ctc atc gct gtg gtg ctg cag ctg tcc cag cag ctg tcg ggt 1047
 Pro Ile Leu Ile Ala Val Val Leu Gln Leu Ser Gln Gln Leu Ser Gly
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 Ile Asn Ala Val Phe Tyr Tyr Ser Thr Ser Ile Phe Glu Lys Ala Gly
 290 295 300
 gtg cag cag cct gtg tac gcc acc atc ggc tcc ggt atc gtc aac acg 1143
 Val Gln Gln Pro Val Tyr Ala Thr Ile Gly Ser Gly Ile Val Asn Thr
 305 310 315
 gcc ttc act gtg gtg tcg ctg ttt gtt gta gag cga gct gga cga cgg 1191
 Ala Phe Thr Val Val Ser Leu Phe Val Val Glu Arg Ala Gly Arg Arg
 320 325 330

acc ctg cac ctc att ggc ctg gct ggc atg gca ggc tgt gct gtg ctc 1239
 Thr Leu His Leu Ile Gly Leu Ala Gly Met Ala Gly Cys Ala Val Leu
 335 340 345 350
 atg acc atc gcc ctg gcc tlg ctg gaa cgg ctg cct tgg atg tcc tat 1287
 Met Thr Ile Ala Leu Ala Leu Leu Glu Arg Leu Pro Trp Met Ser Tyr
 355 360 365
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 Leu Ser Ile Val Ala Ile Phe Gly Phe Val Ala Phe Phe Glu Val Gly
 370 375 380
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 Pro Gly Pro Ile Pro Trp Phe Ile Val Ala Glu Leu Phe Ser Gln Gly
 385 390 395
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 Pro Arg Pro Ala Arg Ile Ala Val Ala Gly Phe Ser Asn Trp Thr Ser
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 aac ttc att gtg ggc atg tgc ttc cag tat gtg gag caa ctg tgc ggc 1479
 Asn Phe Ile Val Gly Met Cys Phe Gln Tyr Val Glu Gln Leu Cys Gly
 415 420 425 430
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 Pro Tyr Val Phe Ile Ile Phe Thr Val Leu Leu Val Leu Phe Phe Ile
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 ttc acc tac ttc aaa gtc cct gag acc aaa ggc cga acc ttc gat gag 1575
 Phe Thr Tyr Phe Lys Val Pro Glu Thr Lys Gly Arg Thr Phe Asp Glu
 450 455 460
 atc gct tcc ggc ttc cgg cag ggg ggt gcc agc caa agt gac aag aca 1623
 Ile Ala Ser Gly Phe Arg Gln Gly Gly Ala Ser Gln Ser Asp Lys Thr
 465 470 475
 ccc gag gag ctc ttc cac cct ctg ggg gcg gac tcc caa gtg tga 1668
 Pro Glu Glu Leu Phe His Pro Leu Gly Ala Asp Ser Gln Val

480 485 490
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 cagctagatg agacctcttc cgaaccgaca gatctcgggc aagccgggccc tgggcgcctt 1788
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<210> 652

<211> 492

<212> PRT

<213> Mus musculus

<400> 652

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Ile Asn Ala Pro Gln Lys Val Ile Glu Glu Phe Tyr Asn Gln Thr Trp

35 40 45

Asn His Arg Ile Gly Glu Pro Ile Pro Ser Thr Thr Leu Thr Thr Leu
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 Trp Ser Leu Ser Val Ala Ile Phe Ser Val Gly Gly Met Ile Gly Ser
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 Phe Ser Val Gly Leu Phe Val Asn Arg Phe Gly Arg Arg Asn Ser Met
 85 90 95
 Leu Met Met Asn Leu Leu Ala Phe Val Ala Ala Val Leu Met Gly Phe
 100 105 110
 Ser Lys Leu Gly Lys Ser Phe Glu Met Leu Ile Leu Gly Arg Phe Ile
 115 120 125
 Ile Gly Val Tyr Cys Gly Leu Thr Thr Gly Phe Val Pro Met Tyr Val
 130 135 140
 Gly Glu Val Ser Pro Thr Ala Leu Arg Gly Ala Leu Gly Thr Leu His
 145 150 155 160
 Gln Leu Gly Ile Val Val Gly Ile Leu Ile Ala Gln Val Phe Gly Leu
 165 170 175
 Asp Ser Ile Met Gly Asn Ala Asp Leu Trp Pro Leu Leu Leu Ser Val
 180 185 190
 Val Phe Val Pro Ala Leu Leu Gln Cys Ile Leu Leu Pro Phe Cys Pro
 195 200 205
 Glu Ser Pro Arg Phe Leu Leu Ile Asn Arg Asn Glu Glu Asn Arg Ala
 210 215 220
 Lys Ser Val Leu Lys Lys Leu Arg Gly Thr Ala Asp Val Thr Arg Asp
 225 230 235 240
 Leu Gln Glu Met Lys Glu Glu Gly Arg Gln Met Met Arg Glu Lys Lys
 245 250 255
 Val Thr Ile Leu Glu Leu Phe Arg Ser Pro Ala Tyr Arg Gln Pro Ile
 260 265 270
 Leu Ile Ala Val Val Leu Gln Leu Ser Gln Gln Leu Ser Gly Ile Asn

275	280	285
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290	295	300
Gln Pro Val Tyr Ala Thr Ile Gly Ser Gly Ile Val Asn Thr Ala Phe		
305	310	315
Thr Val Val Ser Leu Phe Val Val Glu Arg Ala Gly Arg Arg Thr Leu		
325	330	335
His Leu Ile Gly Leu Ala Gly Met Ala Gly Cys Ala Val Leu Met Thr		
340	345	350
Ile Ala Leu Ala Leu Leu Glu Arg Leu Pro Trp Met Ser Tyr Leu Ser		
355	360	365
Ile Val Ala Ile Phe Gly Phe Val Ala Phe Phe Glu Val Gly Pro Gly		
370	375	380
Pro Ile Pro Trp Phe Ile Val Ala Glu Leu Phe Ser Gln Gly Pro Arg		
385	390	395
Pro Ala Arg Ile Ala Val Ala Gly Phe Ser Asn Trp Thr Ser Asn Phe		
405	410	415
Ile Val Gly Met Cys Phe Gln Tyr Val Glu Gln Leu Cys Gly Pro Tyr		
420	425	430
Val Phe Ile Ile Phe Thr Val Leu Leu Val Leu Phe Phe Ile Phe Thr		
435	440	445
Tyr Phe Lys Val Pro Glu Thr Lys Gly Arg Thr Phe Asp Glu Ile Ala		
450	455	460
Ser Gly Phe Arg Gln Gly Gly Ala Ser Gln Ser Asp Lys Thr Pro Glu		
465	470	475
Glu Leu Phe His Pro Leu Gly Ala Asp Ser Gln Val		
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<210> 653

<211> 432

<212> DNA

<213> *Mus musculus*

<400> 653

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taacacgctg gcggtcaatg ctgatggagt gcttgtgtct ggagctgaca atggcaccat 180
gcacctttgg gactggagaa ctggctataa ttticagcgc gtccatgcag ctgtacagcc 240
tgggtctttg gacagtgagt caggaatatt tgcttgtgtc ttgatcggt cagaaagtcg 300
gttactaacg gctgaagctg ataaaacat taaagtttac agagaggatg agactgcgac 360
agaagaaact caccagtcg gctggaaacc agaaattatc aagagaaagc gatttttagtg 420
tcttcatggc tg                                     432
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<210> 654

<211> 928

<212> DNA

<213> *Mus musculus*

<400> 654

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tatgacatta ctaatctcaa ctccctccag cagacttcta aatggattga tgacgtcagg 240
acggagaggg gcagtacgt gatcatcatg cttgtgggta acaagacgga tctggctgat 300
aagaggcaga taaccatcga ggaaggagaa cagcggltcca aagaactgag cgtcatgtgc 360
atcgagacca gcgcgaagac tggctacaac gtgaagcagc tcttccgacg tgtggcgta 420
tcntgccggc atggagaatg tctaggagaa gagcaaaaag ggatgattga catcaacttg 480
acaacgtcag gagccccgcc agcagggcgg ctcgtctgta atgaacgcca atgggttgct 540
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 atttcatttg tccattccct catagagaig gtggaatgga ttgggtgtgc atgggcactt 660
 ctttaaaggt tcgtacaata ttttgnitgt gataatgcct atagttagaa atgtaattgt 720
 taacaaaaaa aaaagggcgc gcgtctctct tgtggaggta tcttctgcgg gggttattat 780
 aggtgtgggt agggaccagt gtgtattgta tggttgtgcg ccgtccgtga gtcacactca 840
 gcttagncng tagntignca agcaccacgg tttctcttc tgcgtaagaa ggggtgtcca 900
 aaaagacggg gactctgttt ctttata 928

<210> 655

<211> 470

<212> DNA

<213> Mus musculus

<400> 655

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 gaagcgtctg tttaaaaact ttcacaggca gctgttctgt tggctcgata aatgggttga 180
 tctgactatg gatgacattc ggaggatgga agaagagacg aagagacagc tggatgagat 240
 gagacaaaag gacccagtga aaggaatgac agcagacgac tagcgccacc gccctttctg 300
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<210> 656

<211> 4198

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (5).. (2761)

<400> 656

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gat gac caa gtc aaa aag att gat aag tat ctg tat gcc atg cgg ctc  97
Asp Asp Gln Val Lys Lys Ile Asp Lys Tyr Leu Tyr Ala Met Arg Leu
            20             25             30
tct gat gaa att ctg ata gat atc ctg aca cgc ttc aag aaa gag atg  145
Ser Asp Glu Ile Leu Ile Asp Ile Leu Thr Arg Phe Lys Lys Glu Met
            35             40             45
aag aat ggc ctc tcc cgg gat tat aac cca acg gcc tcc gtc aag atg  193
Lys Asn Gly Leu Ser Arg Asp Tyr Asn Pro Thr Ala Ser Val Lys Met
            50             55             60
ctg cca acc ttt gtc cgg tcc att ccg gac ggc tca gaa aag ggg gat  241
Leu Pro Thr Phe Val Arg Ser Ile Pro Asp Gly Ser Glu Lys Gly Asp
            65             70             75
ttc att gca ctg gat ctc ggc ggg tct tcc ttt cga atc ctg cgg gtg  289
Phe Ile Ala Leu Asp Leu Gly Gly Ser Ser Phe Arg Ile Leu Arg Val
            80             85             90             95
cag gtg aac cac gag aag agt cag aac gtc agc atg gag tct gag gtc  337
Gln Val Asn His Glu Lys Ser Gln Asn Val Ser Met Glu Ser Glu Val
            100            105            110
tac gac acc cca gag aac atc gtg cac ggc agt gga agc cag ctt ttt  385
Tyr Asp Thr Pro Glu Asn Ile Val His Gly Ser Gly Ser Gln Leu Phe
            115            120            125
gat cac gtc gct gaa tgc ctc gga gac ttc atg gag aaa agg aag atc  433

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Asp His Val Ala Glu Cys Leu Gly Asp Phe Met Glu Lys Arg Lys Ile
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 aag gac aag aaa tta ccc gtg gga ttc acg ttt tcc ttc ccg tgc cga 481
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 145 150 155
 caa tcc aaa ata gac gag gcc gta ctg atc acg tgg aca aag cgg ttc 529
 Gln Ser Lys Ile Asp Glu Ala Val Leu Ile Thr Trp Thr Lys Arg Phe
 160 165 170 175
 aaa gcc agt ggc gtg gaa ggg gcg gat gtg gtc aag ctg ctg aat aaa 577
 Lys Ala Ser Gly Val Glu Gly Ala Asp Val Val Lys Leu Leu Asn Lys
 180 185 190
 gcc att aag aag cga ggg gac tat gac gct aac att gta gct gtg gtg 625
 Ala Ile Lys Lys Arg Gly Asp Tyr Asp Ala Asn Ile Val Ala Val Val
 195 200 205
 aat gac aca gtg ggg acc atg atg act tgc ggc tac gat gac caa cag 673
 Asn Asp Thr Val Gly Thr Met Met Thr Cys Gly Tyr Asp Asp Gln Gln
 210 215 220
 tgt gaa gtc ggc ctg atc att ggc act ggc acc aat gct tgc tac atg 721
 Cys Glu Val Gly Leu Ile Ile Gly Thr Gly Thr Asn Ala Cys Tyr Met
 225 230 235
 gag gaa ctg cga cac atc gac ctg gtg gaa ggc gat gag ggg agg atg 769
 Glu Glu Leu Arg His Ile Asp Leu Val Glu Gly Asp Glu Gly Arg Met
 240 245 250 255
 tgt att aac acg gaa tgg gga gcc ttt ggg gat gat ggg tcc ctg gaa 817
 Cys Ile Asn Thr Glu Trp Gly Ala Phe Gly Asp Asp Gly Ser Leu Glu
 260 265 270
 gac att cga aca gag ttt gac aga gag tta gac aga gga tcc ctg aac 865
 Asp Ile Arg Thr Glu Phe Asp Arg Glu Leu Asp Arg Gly Ser Leu Asn
 275 280 285

cct ggg aaa cag ctg ttc gag aag atg gtg agc ggc atg tac atg ggg 913
 Pro Gly Lys Gln Leu Phe Glu Lys Met Val Ser Gly Met Tyr Met Gly
 290 295 300
 gag ctg gtc cgg ctg atc ctg gtg aag atg gcc aag gaa agc ctc tta 961
 Glu Leu Val Arg Leu Ile Leu Val Lys Met Ala Lys Glu Ser Leu Leu
 305 310 315
 ttt gaa ggg cgc atc act cca gag ctg ctc acg agg ggc aag ttc acc 1009
 Phe Glu Gly Arg Ile Thr Pro Glu Leu Leu Thr Arg Gly Lys Phe Thr
 320 325 330 335
 act agc gac gta gcc gcc att gaa acg gat aag gaa ggc gtt caa aat 1057
 Thr Ser Asp Val Ala Ala Ile Glu Thr Asp Lys Glu Gly Val Gln Asn
 340 345 350
 gcc aag gaa atc ttg acc cgg ctg gga gtg gag ccg tct cac gat gac 1105
 Ala Lys Glu Ile Leu Thr Arg Leu Gly Val Glu Pro Ser His Asp Asp
 355 360 365
 tgc gta tcg gtc cag cac gta tgc acg atc gtc tcc ttc cga tca gcc 1153
 Cys Val Ser Val Gln His Val Cys Thr Ile Val Ser Phe Arg Ser Ala
 370 375 380
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 Asn Leu Val Ala Ala Thr Leu Gly Ala Ile Leu Asn Arg Leu Arg Asp
 385 390 395
 aat aag ggc acg ccc agg ctg cgg acc aca gtt ggc gta gac ggt tct 1249
 Asn Lys Gly Thr Pro Arg Leu Arg Thr Thr Val Gly Val Asp Gly Ser
 400 405 410 415
 ctc tac aag atg cac cca cag tat tcc cgg cgg ttc cac aag acc ctg 1297
 Leu Tyr Lys Met His Pro Gln Tyr Ser Arg Arg Phe His Lys Thr Leu
 420 425 430
 agg cgc ctg gtg cct gac tcg gac gtc cgg ttc ctc ctc tcg gag agt 1345
 Arg Arg Leu Val Pro Asp Ser Asp Val Arg Phe Leu Leu Ser Glu Ser

435	440	445	
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Ala Glu Gln His Arg Gln Ile Glu Glu Thr Leu Ser His Phe Arg Leu			
465	470	475	
agc aag cag gca ctg atg gag gtg aag aag aag ctg cgg tca gag atg	1489		
Ser Lys Gln Ala Leu Met Glu Val Lys Lys Lys Leu Arg Ser Glu Met			
480	485	490	495
gaa atg ggg ctg aga aag gag acc aac agc aga gct acg gtc aaa atg	1537		
Glu Met Gly Leu Arg Lys Glu Thr Asn Ser Arg Ala Thr Val Lys Met			
500	505	510	
ctg cct tct tat gtt cgg agc atc cca gat ggg act gag cat ggt gac	1585		
Leu Pro Ser Tyr Val Arg Ser Ile Pro Asp Gly Thr Glu His Gly Asp			
515	520	525	
ttc ctg gcc ttg gat ctc gga gga acg aat ttc cga gtc cta ctg gta	1633		
Phe Leu Ala Leu Asp Leu Gly Gly Thr Asn Phe Arg Val Leu Leu Val			
530	535	540	
aag atc cgt agt ggg aaa aag aga aca gtg gag atg cac aac aag atc	1681		
Lys Ile Arg Ser Gly Lys Lys Arg Thr Val Glu Met His Asn Lys Ile			
545	550	555	
tac tcc att ccc ctg gaa atc atg cag ggc acc ggg gat gag ctg ttt	1729		
Tyr Ser Ile Pro Leu Glu Ile Met Gln Gly Thr Gly Asp Glu Leu Phe			
560	565	570	575
gat cac att gtc tcc tgc atc tcc gac ttc ctg gac tac atg ggg atc	1777		
Asp His Ile Val Ser Cys Ile Ser Asp Phe Leu Asp Tyr Met Gly Ile			
580	585	590	
aaa ggc ccc cgg atg cct ctg ggc ttc acc ttc tcg ttt ccc tgc aag	1825		

Lys Gly Pro Arg Met Pro Leu Gly Phe Thr Phe Ser Phe Pro Cys Lys
 595 600 605
 cag acg agc cta gat tgc gga atc ttc atc acg tgg aca aag gga ttc 1873
 Gln Thr Ser Leu Asp Cys Gly Ile Leu Ile Thr Trp Thr Lys Gly Phe
 610 615 620
 aaa gcc acc gac tgt gtg ggt cac gat gta gcc act tta ctg agg gat 1921
 Lys Ala Thr Asp Cys Val Gly His Asp Val Ala Thr Leu Leu Arg Asp
 625 630 635
 gct gta aaa agg aga gag gaa ttt gac ctg gat gtg gtg gct gtg gtc 1969
 Ala Val Lys Arg Arg Glu Glu Phe Asp Leu Asp Val Val Ala Val Val
 640 645 650 655
 aac gac acc gtg ggc acc atg atg act tgt gct tat gaa gaa cct tct 2017
 Asn Asp Thr Val Gly Thr Met Met Thr Cys Ala Tyr Glu Glu Pro Ser
 660 665 670
 tgt gag att gga ctc atc gtg ggg act ggc agc aat gcc tgc tac atg 2065
 Cys Glu Ile Gly Leu Ile Val Gly Thr Gly Ser Asn Ala Cys Tyr Met
 675 680 685
 gag gag atg aaa aac gtg gag atg gtg gag ggt aac cag ggc cag atg 2113
 Glu Glu Met Lys Asn Val Glu Met Val Glu Gly Asn Gln Gly Gln Met
 690 695 700
 tgc atc aat atg gaa tgg ggg gcc ttt ggt gac aac ggc tgt ctg gac 2161
 Cys Ile Asn Met Glu Trp Gly Ala Phe Gly Asp Asn Gly Cys Leu Asp
 705 710 715
 gac atc aga aca gac ttc gac aaa gtg gtg gac gaa tat tct cta aac 2209
 Asp Ile Arg Thr Asp Phe Asp Lys Val Val Asp Glu Tyr Ser Leu Asn
 720 725 730 735
 agt ggg aaa caa agg ttt gag aag atg atc agt gga atg tac ctg ggt 2257
 Ser Gly Lys Gln Arg Phe Glu Lys Met Ile Ser Gly Met Tyr Leu Gly
 740 745 750

gag atc gtc cgt aac atc ctg att gac ttc acc aag aaa ggc ttc ctc	2305
Glu Ile Val Arg Asn Ile Leu Ile Asp Phe Thr Lys Lys Gly Phe Leu	
755 760 765	
ttc cgg gga cag atc tct gag cca ctc aag acc cga ggc atc ttc gag	2353
Phe Arg Gly Gln Ile Ser Glu Pro Leu Lys Thr Arg Gly Ile Phe Glu	
770 775 780	
acc aag ttt ctc tct cag atc gag agt gac cga tta gcg ctg ctc cag	2401
Thr Lys Phe Leu Ser Gln Ile Glu Ser Asp Arg Leu Ala Leu Leu Gln	
785 790 795	
gtg cgg gcc atc ctt caa cag ctg ggt cta aac agc acg tgc agc gac	2449
Val Arg Ala Ile Leu Gln Gln Leu Gly Leu Asn Ser Thr Cys Ser Asp	
800 805 810 815	
agt atc ctg gtc aag acc gtg tgt ggg gtg gtg tcc aag cgg gcg gcc	2497
Ser Ile Leu Val Lys Thr Val Cys Gly Val Val Ser Lys Arg Ala Ala	
820 825 830	
cag ctg tgt ggt gcc ggc atg gcg gcc gtg gtg gaa aag atc cga gag	2545
Gln Leu Cys Gly Ala Gly Met Ala Ala Val Val Glu Lys Ile Arg Glu	
835 840 845	
aac aga ggc cta gac cac ctg aat gta acc gtg ggc gtg gac ggg acg	2593
Asn Arg Gly Leu Asp His Leu Asn Val Thr Val Gly Val Asp Gly Thr	
850 855 860	
ctc tac aaa ctt cat cca cac ttc tcc aga atc atg cac caa aca gtg	2641
Leu Tyr Lys Leu His Pro His Phe Ser Arg Ile Met His Gln Thr Val	
865 870 875	
aag gaa ctg tca cca aag tgt acc gtg tcc ttc ctc ctg tct gaa gac	2689
Lys Glu Leu Ser Pro Lys Cys Thr Val Ser Phe Leu Leu Ser Glu Asp	
880 885 890 895	
ggc agc ggc aag ggg gcc gcc ctt atc aca gct gtg ggc gtg cgg ctc	2737
Gly Ser Gly Lys Gly Ala Ala Leu Ile Thr Ala Val Gly Val Arg Leu	

900

905

910

aga gga gac cct acg aac gcc taa gagcaggatc ctcccagccc ccagcgcgcc 2791

Arg Gly Asp Pro Thr Asn Ala

915

acccttccag cactcctctc tagaaccgac gaccacacac cgcccccggtg tgttccaccc 2851
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<210> 657

<211> 918

<212> PRT

<213> Mus musculus

<400> 657

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Asp Gln Val Lys Lys Ile Asp Lys Tyr Leu Tyr Ala Met Arg Leu Ser
      20             25             30
Asp Glu Ile Leu Ile Asp Ile Leu Thr Arg Phe Lys Lys Glu Met Lys
      35             40             45
Asn Gly Leu Ser Arg Asp Tyr Asn Pro Thr Ala Ser Val Lys Met Leu
      50             55             60
Pro Thr Phe Val Arg Ser Ile Pro Asp Gly Ser Glu Lys Gly Asp Phe
      65             70             75             80
Ile Ala Leu Asp Leu Gly Gly Ser Ser Phe Arg Ile Leu Arg Val Gln
      85             90             95
Val Asn His Glu Lys Ser Gln Asn Val Ser Met Glu Ser Glu Val Tyr
      100            105            110
Asp Thr Pro Glu Asn Ile Val His Gly Ser Gly Ser Gln Leu Phe Asp
      115            120            125
His Val Ala Glu Cys Leu Gly Asp Phe Met Glu Lys Arg Lys Ile Lys
      130            135            140
Asp Lys Lys Leu Pro Val Gly Phe Thr Phe Ser Phe Pro Cys Arg Gln
      145            150            155            160
Ser Lys Ile Asp Glu Ala Val Leu Ile Thr Trp Thr Lys Arg Phe Lys
      165            170            175
Ala Ser Gly Val Glu Gly Ala Asp Val Val Lys Leu Leu Asn Lys Ala

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180	185	190
Ile Lys Lys Arg Gly Asp Tyr Asp Ala Asn Ile Val Ala Val Val Asn		
195	200	205
Asp Thr Val Gly Thr Met Met Thr Cys Gly Tyr Asp Asp Gln Gln Cys		
210	215	220
Glu Val Gly Leu Ile Ile Gly Thr Gly Thr Asn Ala Cys Tyr Met Glu		
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Glu Leu Arg His Ile Asp Leu Val Glu Gly Asp Glu Gly Arg Met Cys		
245	250	255
Ile Asn Thr Glu Trp Gly Ala Phe Gly Asp Asp Gly Ser Leu Glu Asp		
260	265	270
Ile Arg Thr Glu Phe Asp Arg Glu Leu Asp Arg Gly Ser Leu Asn Pro		
275	280	285
Gly Lys Gln Leu Phe Glu Lys Met Val Ser Gly Met Tyr Met Gly Glu		
290	295	300
Leu Val Arg Leu Ile Leu Val Lys Met Ala Lys Glu Ser Leu Leu Phe		
305	310	315
Glu Gly Arg Ile Thr Pro Glu Leu Leu Thr Arg Gly Lys Phe Thr Thr		
325	330	335
Ser Asp Val Ala Ala Ile Glu Thr Asp Lys Glu Gly Val Gln Asn Ala		
340	345	350
Lys Glu Ile Leu Thr Arg Leu Gly Val Glu Pro Ser His Asp Asp Cys		
355	360	365
Val Ser Val Gln His Val Cys Thr Ile Val Ser Phe Arg Ser Ala Asn		
370	375	380
Leu Val Ala Ala Thr Leu Gly Ala Ile Leu Asn Arg Leu Arg Asp Asn		
385	390	395
Lys Gly Thr Pro Arg Leu Arg Thr Thr Val Gly Val Asp Gly Ser Leu		
405	410	415

Tyr Lys Met His Pro Gln Tyr Ser Arg Arg Phe His Lys Thr Leu Arg
 420 425 430
 Arg Leu Val Pro Asp Ser Asp Val Arg Phe Leu Leu Ser Glu Ser Gly
 435 440 445
 Ser Gly Lys Gly Ala Ala Met Val Thr Ala Val Ala Tyr Arg Leu Ala
 450 455 460
 Glu Gln His Arg Gln Ile Glu Glu Thr Leu Ser His Phe Arg Leu Ser
 465 470 475 480
 Lys Gln Ala Leu Met Glu Val Lys Lys Lys Leu Arg Ser Glu Met Glu
 485 490 495
 Met Gly Leu Arg Lys Glu Thr Asn Ser Arg Ala Thr Val Lys Met Leu
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 Pro Ser Tyr Val Arg Ser Ile Pro Asp Gly Thr Glu His Gly Asp Phe
 515 520 525
 Leu Ala Leu Asp Leu Gly Gly Thr Asn Phe Arg Val Leu Leu Val Lys
 530 535 540
 Ile Arg Ser Gly Lys Lys Arg Thr Val Glu Met His Asn Lys Ile Tyr
 545 550 555 560
 Ser Ile Pro Leu Glu Ile Met Gln Gly Thr Gly Asp Glu Leu Phe Asp
 565 570 575
 His Ile Val Ser Cys Ile Ser Asp Phe Leu Asp Tyr Met Gly Ile Lys
 580 585 590
 Gly Pro Arg Met Pro Leu Gly Phe Thr Phe Ser Phe Pro Cys Lys Gln
 595 600 605
 Thr Ser Leu Asp Cys Gly Ile Leu Ile Thr Trp Thr Lys Gly Phe Lys
 610 615 620
 Ala Thr Asp Cys Val Gly His Asp Val Ala Thr Leu Leu Arg Asp Ala
 625 630 635 640
 Val Lys Arg Arg Glu Glu Phe Asp Leu Asp Val Val Ala Val Val Asn

645	650	655
Asp Thr Val Gly Thr Met Met Thr Cys Ala Tyr Glu Glu Pro Ser Cys		
660	665	670
Glu Ile Gly Leu Ile Val Gly Thr Gly Ser Asn Ala Cys Tyr Met Glu		
675	680	685
Glu Met Lys Asn Val Glu Met Val Glu Gly Asn Gln Gly Gln Met Cys		
690	695	700
Ile Asn Met Glu Trp Gly Ala Phe Gly Asp Asn Gly Cys Leu Asp Asp		
705	710	715
Ile Arg Thr Asp Phe Asp Lys Val Val Asp Glu Tyr Ser Leu Asn Ser		
725	730	735
Gly Lys Gln Arg Phe Glu Lys Met Ile Ser Gly Met Tyr Leu Gly Glu		
740	745	750
Ile Val Arg Asn Ile Leu Ile Asp Phe Thr Lys Lys Gly Phe Leu Phe		
755	760	765
Arg Gly Gln Ile Ser Glu Pro Leu Lys Thr Arg Gly Ile Phe Glu Thr		
770	775	780
Lys Phe Leu Ser Gln Ile Glu Ser Asp Arg Leu Ala Leu Leu Gln Val		
785	790	795
Arg Ala Ile Leu Gln Gln Leu Gly Leu Asn Ser Thr Cys Ser Asp Ser		
805	810	815
Ile Leu Val Lys Thr Val Cys Gly Val Val Ser Lys Arg Ala Ala Gln		
820	825	830
Leu Cys Gly Ala Gly Met Ala Ala Val Val Glu Lys Ile Arg Glu Asn		
835	840	845
Arg Gly Leu Asp His Leu Asn Val Thr Val Gly Val Asp Gly Thr Leu		
850	855	860
Tyr Lys Leu His Pro His Phe Ser Arg Ile Met His Gln Thr Val Lys		
865	870	875
		880

Glu Leu Ser Pro Lys Cys Thr Val Ser Phe Leu Leu Ser Glu Asp Gly

885

890

895

Ser Gly Lys Gly Ala Ala Leu Ile Thr Ala Val Gly Val Arg Leu Arg

900

905

910

Gly Asp Pro Thr Asn Ala

915

<210> 658

<211> 959

<212> DNA

<213> Mus musculus

<400> 658

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 agcaaggaac aaggatcatgg gaaggcacag ggggcctcag atgtttgtgct ttacaagatt 180
 gacgtccctg ccaacagata cgacctcctg tgtctggaag gactggctcg gggcctccag 240
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 ccittaacgat ttattcatac tattgaaagt aagccgtgta ccagttatct atgacaggat 660
 ggtgtggcct gcgatcgtcc gatataatgg gactatcann atcnggtaat ctaggatata 720
 tattgatgca ggcatggctc gicccaagcg gctgtatttg tgtgttgtgc ctgtaaacad 780
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<210> 659

<211> 474

<212> DNA

<213> *Mus musculus*

<400> 659

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ggccttcgag tcgttcctgc tcttcgaggg cgagaagaaa atcaccatta acaaggacac 120
taaggttccc aacgcctgct tgttcacat caacaaagaa gaccacactc tggggaacat 180
cattaaatcg cagctgttga aggacccgca ggtgctgttt gctggctaca aagtcctca 240
ccccttggag cacaagatca tcattcgigt gcagaccacc ccagactaca gtccccagga 300
ggctttcacc aacgccatca cagacctcat cagcgagctc tcccctctgg aggagcgatt 360
ccgggtggcc atcaaggaca agcaagaagg aattgagtag cagctgaaag aagcgttgct 420
tagtggctgg aaggctggca catactcctc agggcccttc agtttaccac atgg      474
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<210> 660

<211> 927

<212> DNA

<213> *Mus musculus*

<400> 660

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 tgttgttatt aaacaaacac tttagat 927

<210> 661

<211> 510

<212> DNA

<213> Mus musculus

<400> 661

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<210> 662

<211> 319

<212> DNA

<213> Mus musculus

<400> 662

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<210> 663

<211> 363

<212> DNA

<213> Mus musculus

<400> 663

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caa 363
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<210> 664

<211> 2207

<212> DNA

<213> Mus musculus

<400> 664

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<210> 665.

<211> 1015

<212> DNA

<213> Mus musculus

<400> 665

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 aactcggatg gtggagaatt cgagcaaagc cttttgttgg ggaaaccggc gggatatgat 660
 attgttgtgc tgtattgggt gcagggtgat ttcttaatgg agggcgtgtg agagagaaaa 720

agaaaaataa attctggggc gagggctgct ctttagggag gttttttgtg tgaattttgt 780
ttttgggggc ggggtgtgga caccgtgtat catggagagg cgggggatgc gcggtatttg 840
tgggtgtgtg agggcgtggt gcgttgggaa atacagtgtt ttcgttgcgt ttatttgtgt 900
tttgttacit gtgttcacg cgggtgtgct cgtttagcgc gcggatatgc gtaggtgttg 960
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<210> 666

<211> 433

<212> DNA

<213> Mus musculus

<400> 666

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gttctccttg tagaagttag gggigaacaa catctctggt attgaagaag tgaacatggt 180
taccgaccaa ggaacagtga tccatgataa caaccctaaa gticaggcat ccttggcagc 240
ggacaccttc accattacag gccatgctga gacaaagcag ctgacacaaa tgcttcccag 300
cattctcaac gagcttgggt cagacagcct gactagttaa aggagactgg ctgacgctct 360
cccgaaaaat ctgtggatga aaacgcgcct tgctactgag acgatgatgt aatggatcca 420
gatctgcgga aat 433

<210> 667

<211> 472

<212> DNA

<213> Mus musculus

<400> 667

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cttctgctgt cacatgtttt ggtgtgagcc caatgctgcc agtctctcag aggctgtgca 120

ggctgcatgc atgctccgct accagaagtg tctggatgct cgctcccaga cctccaccctc 180
 ctgcctccca gcacccccctg cggagtcagt tgcaagacgt gtagggigga cagtcgcgag 240
 ggggtgttcag tcgctgtggg gttccctcaa gcccacacgt ctgggatccc agaccccatg 300
 aagaactccc atccttccctc tgcctgcttg tttggggccc cagggaactc aagggtttgg 360
 ggcaggtagg ggctgtggat gttcttccca caccacacgt cccctgggct gcccttccctc 420
 agtagctggg gttccctacc taggggctgg gagagagaaa ttgaattcct tc 472

<210> 668

<211> 426

<212> DNA

<213> Mus musculus

<400> 668

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 aaagcgctac tgctgccgcc gcatgctgct agcacacgtg gacctgattg agaagctgct 180
 gaactatgca cccctagaga agtgaccgct ggagcctgca ctctctgtc tcctgctggc 240
 cacgggcagc ctgtcgtgct atgttcaaac tgagctattg gggatgttgg tgtattgcct 300
 ggctgtggcc ctgtggctaa gtccgtttac cctggataga actgtttagt aaagatgttt 360
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<210> 669

<211> 1596

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (43).. (1068)

<400> 669

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 Leu Tyr Gly Glu Glu Ala Leu Ser Gly Leu Ala Ala Gly Ala Ser Ser
 5 10 15 20
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 Val Ala Gly Ala Thr Gly Ala Pro Gly Gly Gly Gly Phe Ala Pro Pro
 25 30 35
 ggc cgc gct ttc ccc ggg gcg ccc ccg acg agc agc atg ctg aag aaa 198
 Gly Arg Ala Phe Pro Gly Ala Pro Pro Thr Ser Ser Met Leu Lys Lys
 40 45 50
 gac gcg ctg acg ctc agc ctg gcg gac gag gga gcg gcg gga ttg aaa 246
 Asp Ala Leu Thr Leu Ser Leu Ala Asp Glu Gly Ala Ala Gly Leu Lys
 55 60 65
 cca ggg tcg gcc act gca cct tct gcg ctg cgc ccc gac ggc gcc ccc 294
 Pro Gly Ser Ala Thr Ala Pro Ser Ala Leu Arg Pro Asp Gly Ala Pro
 70 75 80
 gac ggg ctg ctg gct tcg ccg gat ctt ggg ctg ctc aaa ctc gcg tcg 342
 Asp Gly Leu Leu Ala Ser Pro Asp Leu Gly Leu Leu Lys Leu Ala Ser
 85 90 95 100
 ccg gag ctg gag agg ctg atc atc cag tcc aac ggg ctg gtg acc act 390
 Pro Glu Leu Glu Arg Leu Ile Ile Gln Ser Asn Gly Leu Val Thr Thr
 105 110 115
 acc ccg acc agt acg cag ttc ctc tac ccg aag gtg gca gcc agc gag 438
 Thr Pro Thr Ser Thr Gln Phe Leu Tyr Pro Lys Val Ala Ala Ser Glu

120	125	130	
gag cag gag ttc gcc gaa ggc ttc gtc aag gcg ctg gag gac ctg cac			486
Glu Gln Glu Phe Ala Glu Gly Phe Val Lys Ala Leu Glu Asp Leu His			
135	140	145	
aag caa agc cag ctg ggt gcg gcc acc gcg gcc acc tca ggg gct ccc			534
Lys Gln Ser Gln Leu Gly Ala Ala Thr Ala Ala Thr Ser Gly Ala Pro			
150	155	160	
gcg cct ccc gcg ccc gcc gac ctg gcc gcc acc ccc ggg gcc acg gag			582
Ala Pro Pro Ala Pro Ala Asp Leu Ala Ala Thr Pro Gly Ala Thr Glu			
165	170	175	180
acc ccg gtc tac gcc aac ctg agc agt ttc gcg ggt ggc gcc ggg ccc			630
Thr Pro Val Tyr Ala Asn Leu Ser Ser Phe Ala Gly Gly Ala Gly Pro			
185	190	195	
cct ggg ggc gcg gcc acc gtg gct ttc gcc gcg gag cca gtg ccc ttc			678
Pro Gly Gly Ala Ala Thr Val Ala Phe Ala Ala Glu Pro Val Pro Phe			
200	205	210	
ccg ccg ccc ccg ggc gcg ctg ggg ccg ccg cca cct ccg cat cca ccg			726
Pro Pro Pro Pro Gly Ala Leu Gly Pro Pro Pro Pro Pro His Pro Pro			
215	220	225	
cgc ctg gcc gcg ctc aag gac gag ccg cag acc gtg ccg gac gtg ccg			774
Arg Leu Ala Ala Leu Lys Asp Glu Pro Gln Thr Val Pro Asp Val Pro			
230	235	240	
agc ttc ggc gac agc cct ccg ctg tcg ccc atc gac atg gac acg caa			822
Ser Phe Gly Asp Ser Pro Pro Leu Ser Pro Ile Asp Met Asp Thr Gln			
245	250	255	260
gaa cgc atc aag gcg gag cgc aag agg ctg cgc aac cgc atc gcc gcc			870
Glu Arg Ile Lys Ala Glu Arg Lys Arg Leu Arg Asn Arg Ile Ala Ala			
265	270	275	
tcc aaa tgc cgc aag cgc aag ctg gag cgt atc tcg cgc ctg gag gag			918

Ser Lys Cys Arg Lys Arg Lys Leu Glu Arg Ile Ser Arg Leu Glu Glu
 280 285 290
 aaa gtc aag acc ctc aaa agc cag aac acc gag ctg gcg tcc acc gcc 966
 Lys Val Lys Thr Leu Lys Ser Gln Asn Thr Glu Leu Ala Ser Thr Ala
 295 300 305
 agc ctg ctg cgc gag cag gtg gcg cac gtc aaa cag aaa gtc ctc agc 1014
 Ser Leu Leu Arg Glu Gln Val Ala His Val Lys Gln Lys Val Leu Ser
 310 315 320
 cac gtc aac agc ggc tgc cag ctg ctg ccc cag cac cag gtc ccg gcg 1062
 His Val Asn Ser Gly Cys Gln Leu Leu Pro Gln His Gln Val Pro Ala
 325 330 335 340
 tac tga gcccgagcnc ggggcgcatg cgcggactag ctgcggtggg ggggcgcccc 1118
 Tyr
 ggactctttc gagactcggg gccccggac tcgacaagcc ggacccccct taactctgga 1178
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<210> 670

<211> 341

<212> PRT

<213> Mus musculus

<400> 670

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20	25	30	
Phe Ala Pro Pro Gly Arg Ala Phe Pro Gly Ala Pro Pro Thr Ser Ser			
35	40	45	
Met Leu Lys Lys Asp Ala Leu Thr Leu Ser Leu Ala Asp Glu Gly Ala			
50	55	60	
Ala Gly Leu Lys Pro Gly Ser Ala Thr Ala Pro Ser Ala Leu Arg Pro			
65	70	75	80
Asp Gly Ala Pro Asp Gly Leu Leu Ala Ser Pro Asp Leu Gly Leu Leu			
85	90	95	
Lys Leu Ala Ser Pro Glu Leu Glu Arg Leu Ile Ile Gln Ser Asn Gly			
100	105	110	
Leu Val Thr Thr Thr Pro Thr Ser Thr Gln Phe Leu Tyr Pro Lys Val			
115	120	125	
Ala Ala Ser Glu Glu Gln Glu Phe Ala Glu Gly Phe Val Lys Ala Leu			
130	135	140	
Glu Asp Leu His Lys Gln Ser Gln Leu Gly Ala Ala Thr Ala Ala Thr			
145	150	155	160
Ser Gly Ala Pro Ala Pro Pro Ala Pro Ala Asp Leu Ala Ala Thr Pro			
165	170	175	
Gly Ala Thr Glu Thr Pro Val Tyr Ala Asn Leu Ser Ser Phe Ala Gly			
180	185	190	
Gly Ala Gly Pro Pro Gly Gly Ala Ala Thr Val Ala Phe Ala Ala Glu			
195	200	205	
Pro Val Pro Phe Pro Pro Pro Pro Gly Ala Leu Gly Pro Pro Pro Pro			
210	215	220	
Pro His Pro Pro Arg Leu Ala Ala Leu Lys Asp Glu Pro Gln Thr Val			
225	230	235	240

Pro Asp Val Pro Ser Phe Gly Asp Ser Pro Pro Leu Ser Pro Ile Asp

245

250

255

Met Asp Thr Gln Glu Arg Ile Lys Ala Glu Arg Lys Arg Leu Arg Asn

260

265

270

Arg Ile Ala Ala Ser Lys Cys Arg Lys Arg Lys Leu Glu Arg Ile Ser

275

280

285

Arg Leu Glu Glu Lys Val Lys Thr Leu Lys Ser Gln Asn Thr Glu Leu

290

295

300

Ala Ser Thr Ala Ser Leu Leu Arg Glu Gln Val Ala His Val Lys Gln

305

310

315

320

Lys Val Leu Ser His Val Asn Ser Gly Cys Gln Leu Leu Pro Gln His

325

330

335

Gln Val Pro Ala Tyr

340

<210> 671

<211> 2862

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (393).. (1655)

<400> 671

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 ttttttttct ttaagaagcc aacaacttgg ttgctagttt tttttctgtt aatttttttc 180
 ttttttttgg tgtgtgtgga tgtgttgtgg tggctttttc taagtgtgga gggcaaaagg 240

agataccatc ctaggctcag ttcaaccctt ctccaaaaa aacggcttct ctggcgctcc 300
 agctgcctga cagcctctac ccggtggaag acctcgccgc ctgcgcggig accatcttcc 360
 ccaatggatga actgggaggc ccctttgacc ag atg aac gga gtg gcg gga gat 413
 Met Asn Gly Val Ala Gly Asp
 1 5
 ggc atg atc aac att gac atg act gga gag aag aga ccc ctg gat ctc 461
 Gly Met Ile Asn Ile Asp Met Thr Gly Glu Lys Arg Pro Leu Asp Leu
 10 15 20
 ccg tat ccg agt agc ttc gct ccc atc tct gca cct aga aac cag acc 509
 Pro Tyr Pro Ser Ser Phe Ala Pro Ile Ser Ala Pro Arg Asn Gln Thr
 25 30 35
 ttc acc tac atg ggc aaa ttc tcc att gac cca cag tac cct ggt gcc 557
 Phe Thr Tyr Met Gly Lys Phe Ser Ile Asp Pro Gln Tyr Pro Gly Ala
 40 45 50 55
 agc tgc tat cca gaa ggt atc atc aat att gtg agt gcg ggc atc ttg 605
 Ser Cys Tyr Pro Glu Gly Ile Ile Asn Ile Val Ser Ala Gly Ile Leu
 60 65 70
 caa ggg gtc acc cct cca gct tca acc aca gcc tcc tcc agc gtc acc 653
 Gln Gly Val Thr Pro Pro Ala Ser Thr Thr Ala Ser Ser Ser Val Thr
 75 80 85
 tcc gcc tcc ccc aac cca ctg gcc acg gga ccc ctg ggt gtg tgt acc 701
 Ser Ala Ser Pro Asn Pro Leu Ala Thr Gly Pro Leu Gly Val Cys Thr
 90 95 100
 atg tcc cag act cag cct gaa ctg gac cac ctc tac tct ccg cca cca 749
 Met Ser Gln Thr Gln Pro Glu Leu Asp His Leu Tyr Ser Pro Pro Pro
 105 110 115
 cct cct cct cct tat tcg ggc tgt aca gga gat ctc tac cag gat cct 797
 Pro Pro Pro Pro Tyr Ser Gly Cys Thr Gly Asp Leu Tyr Gln Asp Pro
 120 125 130 135

tca gca ttc tta tgc ccg cca tcc acc act tcc acc tcc tct ctg gcc	845
Ser Ala Phe Leu Ser Pro Pro Ser Thr Thr Ser Thr Ser Ser Leu Ala	
140 145 150	
tac cag cca cct cct tcc tac cca tcc ccc aag cca gct atg gac cca	893
Tyr Gln Pro Pro Pro Ser Tyr Pro Ser Pro Lys Pro Ala Met Asp Pro	
155 160 165	
ggc ctc att cct atg atc cca gac tat cct gga ttt ttt cca tct ccg	941
Gly Leu Ile Pro Met Ile Pro Asp Tyr Pro Gly Phe Phe Pro Ser Pro	
170 175 180	
tgc cag aga gat cca cac ggt gct gct ggc cca gat cga aag ccg ttt	989
Cys Gln Arg Asp Pro His Gly Ala Ala Gly Pro Asp Arg Lys Pro Phe	
185 190 195	
ccc tgt cct ctg gac tcc ctg cga gtg ccc cct cca ctc acg cca ctc	1037
Pro Cys Pro Leu Asp Ser Leu Arg Val Pro Pro Pro Leu Thr Pro Leu	
200 205 210 215	
tct acc atc cgt aat ttt act ctg ggg ggt ccc ggt gct gga gtc acg	1085
Ser Thr Ile Arg Asn Phe Thr Leu Gly Gly Pro Gly Ala Gly Val Thr	
220 225 230	
gga cca gga gca agt gga ggt ggt gag gga cct cgg ctg cct ggc agt	1133
Gly Pro Gly Ala Ser Gly Gly Gly Glu Gly Pro Arg Leu Pro Gly Ser	
235 240 245	
ggg tct gca gca gtg act gcc acc cct tat aat ccg cac cac ctg cca	1181
Gly Ser Ala Ala Val Thr Ala Thr Pro Tyr Asn Pro His His Leu Pro	
250 255 260	
ttg cgg ccc atc ctg cga cct cga aag tac cct aac agg ccc agc aaa	1229
Leu Arg Pro Ile Leu Arg Pro Arg Lys Tyr Pro Asn Arg Pro Ser Lys	
265 270 275	
acg cca gtg cac gaa agg ccc tat ccc tgc cca gca gaa ggt tgt gat	1277
Thr Pro Val His Glu Arg Pro Tyr Pro Cys Pro Ala Glu Gly Cys Asp	

280	285	290	295	
agg agg ttc tca cgc tct gat gag ctg acc agg cac atc cga atc cac	1325			
Arg Arg Phe Ser Arg Ser Asp Glu Leu Thr Arg His Ile Arg Ile His				
300	305	310		
acg ggc cac aag ccc ttc cag tgt cgg atc tgc atg cga aac ttc agc	1373			
Thr Gly His Lys Pro Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser				
315	320	325		
cga agt gac cac ctt act act cac atc cga acc cac acc ggg gag aag	1421			
Arg Ser Asp His Leu Thr Thr His Ile Arg Thr His Thr Gly Glu Lys				
330	335	340		
ccc ttt gcc tgt gac tat tgt ggc cgc aag ttt gcc agg agt gac gaa	1469			
Pro Phe Ala Cys Asp Tyr Cys Gly Arg Lys Phe Ala Arg Ser Asp Glu				
345	350	355		
agg aag cgc cac acc aag atc cac ctt cgg cag aag gaa cgg aag agc	1517			
Arg Lys Arg His Thr Lys Ile His Leu Arg Gln Lys Glu Arg Lys Ser				
360	365	370	375	
agt gct ccc tct gca cct cca tct gcc cag tct tca gcc tct ggt cct	1565			
Ser Ala Pro Ser Ala Pro Pro Ser Ala Gln Ser Ser Ala Ser Gly Pro				
380	385	390		
ggg ggc tcg cag gcc ggg ggc agc ctg tgc ggt aac agc gcc att gga	1613			
Gly Gly Ser Gln Ala Gly Gly Ser Leu Cys Gly Asn Ser Ala Ile Gly				
395	400	405		
gga cca ctg gcc tcc tgc acc tct cga acc agg aca ccg tga	1655			
Gly Pro Leu Ala Ser Cys Thr Ser Arg Thr Arg Thr Pro				
410	415	420		
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ccaacactac cacccttccc tgttcctccc catgatcccg tgatctgggc aaaggacctt	1775			
gatggagccc agctctgtcc caccttctca cggacggcct tccgaaaact taggccaatt	1835			
gaagggagtt gactgtcact ccaagaaatg ggggagcaaa aagagggctg ggtgagggcc	1895			

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<210> 672

<211> 420

<212> PRT

<213> Mus musculus

<400> 672

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20 25 30

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35	40	45
Asp Pro Gln Tyr Pro Gly Ala Ser Cys Tyr Pro Glu Gly Ile Ile Asn		
50	55	60
Ile Val Ser Ala Gly Ile Leu Gln Gly Val Thr Pro Pro Ala Ser Thr		
65	70	75
Thr Ala Ser Ser Ser Val Thr Ser Ala Ser Pro Asn Pro Leu Ala Thr		
85	90	95
Gly Pro Leu Gly Val Cys Thr Met Ser Gln Thr Gln Pro Glu Leu Asp		
100	105	110
His Leu Tyr Ser Pro Pro Pro Pro Pro Pro Tyr Ser Gly Cys Thr		
115	120	125
Gly Asp Leu Tyr Gln Asp Pro Ser Ala Phe Leu Ser Pro Pro Ser Thr		
130	135	140
Thr Ser Thr Ser Ser Leu Ala Tyr Gln Pro Pro Pro Ser Tyr Pro Ser		
145	150	155
Pro Lys Pro Ala Met Asp Pro Gly Leu Ile Pro Met Ile Pro Asp Tyr		
165	170	175
Pro Gly Phe Phe Pro Ser Pro Cys Gln Arg Asp Pro His Gly Ala Ala		
180	185	190
Gly Pro Asp Arg Lys Pro Phe Pro Cys Pro Leu Asp Ser Leu Arg Val		
195	200	205
Pro Pro Pro Leu Thr Pro Leu Ser Thr Ile Arg Asn Phe Thr Leu Gly		
210	215	220
Gly Pro Gly Ala Gly Val Thr Gly Pro Gly Ala Ser Gly Gly Gly Glu		
225	230	235
Gly Pro Arg Leu Pro Gly Ser Gly Ser Ala Ala Val Thr Ala Thr Pro		
245	250	255
Tyr Asn Pro His His Leu Pro Leu Arg Pro Ile Leu Arg Pro Arg Lys		
260	265	270

Tyr Pro Asn Arg Pro Ser Lys Thr Pro Val His Glu Arg Pro Tyr Pro
 275 280 285
 Cys Pro Ala Glu Gly Cys Asp Arg Arg Phe Ser Arg Ser Asp Glu Leu
 290 295 300
 Thr Arg His Ile Arg Ile His Thr Gly His Lys Pro Phe Gln Cys Arg
 305 310 315 320
 Ile Cys Met Arg Asn Phe Ser Arg Ser Asp His Leu Thr Thr His Ile
 325 330 335
 Arg Thr His Thr Gly Glu Lys Pro Phe Ala Cys Asp Tyr Cys Gly Arg
 340 345 350
 Lys Phe Ala Arg Ser Asp Glu Arg Lys Arg His Thr Lys Ile His Leu
 355 360 365
 Arg Gln Lys Glu Arg Lys Ser Ser Ala Pro Ser Ala Pro Pro Ser Ala
 370 375 380
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<210> 673

<211> 1086

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (80).. (967)

<400> 673

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      Met Ser Gly Ala Leu Asp Val Leu Gln Met Lys
              1              5              10
gag gag gat gtc ctc aaa ctc ctt gct gcg gga acc cac tta ggt ggc 160
Glu Glu Asp Val Leu Lys Leu Leu Ala Ala Gly Thr His Leu Gly Gly
              15              20              25
acc aac ctt gac ttt cag atg gag cag tac atc tac aaa agg aaa agt 208
Thr Asn Leu Asp Phe Gln Met Glu Gln Tyr Ile Tyr Lys Arg Lys Ser
              30              35              40
gac ggt atc tac atc ata aac ctg aag agg acc tgg gag aag ctg ttg 256
Asp Gly Ile Tyr Ile Ile Asn Leu Lys Arg Thr Trp Glu Lys Leu Leu
              45              50              55
ctc gca gct cga gct att gtt gcc atc gag aat cct gct gac gtc agc 304
Leu Ala Ala Arg Ala Ile Val Ala Ile Glu Asn Pro Ala Asp Val Ser
              60              65              70              75
gtc atc tcc tcc agg aac act ggc cag cga gct gtg ctg aag ttt gct 352
Val Ile Ser Ser Arg Asn Thr Gly Gln Arg Ala Val Leu Lys Phe Ala
              80              85              90
gct gcc aca gga gcc act ccg atc gct ggc cgc ttc aca cct ggg acc 400
Ala Ala Thr Gly Ala Thr Pro Ile Ala Gly Arg Phe Thr Pro Gly Thr
              95              100              105
ttc act aac cag atc caa gca gcc ttc agg gag cca cgg ctt cta gtg 448
Phe Thr Asn Gln Ile Gln Ala Ala Phe Arg Glu Pro Arg Leu Leu Val
              110              115              120
gtg acc gat ccc agg gct gac cat cag cca ctc aca gag gcc tct tat 496
Val Thr Asp Pro Arg Ala Asp His Gln Pro Leu Thr Glu Ala Ser Tyr

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125	130	135	
gtc aac ctg ccc acc att gct ctg tgt aac aca gat tct ccc ctg gcg	544		
Val Asn Leu Pro Thr Ile Ala Leu Cys Asn Thr Asp Ser Pro Leu Ala			
140	145	150	155
tat gtg gac att gcc atc cca tgc aac aac aag gga gct cac tca gtg	592		
Tyr Val Asp Ile Ala Ile Pro Cys Asn Asn Lys Gly Ala His Ser Val			
160	165	170	
ggt ctg atg tgg tgg atg ctg gcc agg gaa gta ctc cgc atg cga ggt	640		
Gly Leu Met Trp Trp Met Leu Ala Arg Glu Val Leu Arg Met Arg Gly			
175	180	185	
act atc tcc cgt gag cac ccc tgg gag gtc atg cct gat ctt tac ttc	688		
Thr Ile Ser Arg Glu His Pro Trp Glu Val Met Pro Asp Leu Tyr Phe			
190	195	200	
tac aga gac cca gag gag att gag aag gag gag cag gct gct gct gag	736		
Tyr Arg Asp Pro Glu Glu Ile Glu Lys Glu Glu Gln Ala Ala Ala Glu			
205	210	215	
aag gct gtg acc aag gag gaa ttc cag ggt gaa tgg acc gca cca gct	784		
Lys Ala Val Thr Lys Glu Glu Phe Gln Gly Glu Trp Thr Ala Pro Ala			
220	225	230	235
cct gag ttc act gct gct cag cct gag gtg gcc gac tgg tct gag ggt	832		
Pro Glu Phe Thr Ala Ala Gln Pro Glu Val Ala Asp Trp Ser Glu Gly			
240	245	250	
gtg cag gtt ccc tct gtg ccc atc cag cag ttc ccc acg gaa gac tgg	880		
Val Gln Val Pro Ser Val Pro Ile Gln Gln Phe Pro Thr Glu Asp Trp			
255	260	265	
agt gca cag cca gcc act gag gat tgg tca gca gct ccc aca gcg cag	928		
Ser Ala Gln Pro Ala Thr Glu Asp Trp Ser Ala Ala Pro Thr Ala Gln			
270	275	280	
gcc act gag tgg gtt gga gcc acc act gag tgg tcc tga tctgctgtgc	977		

Ala Thr Glu Trp Val Gly Ala Thr Thr Glu Trp Ser

285

290

295

aggtgcctga gcaaagggaa aaaagatgga aggaaaataa agttgctaaa agctgtctta 1037

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1086

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<211> 295

<212> PRT

<213> Mus musculus

<400> 674

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20

25

30

Gln Met Glu Gln Tyr Ile Tyr Lys Arg Lys Ser Asp Gly Ile Tyr Ile

35

40

45

Ile Asn Leu Lys Arg Thr Trp Glu Lys Leu Leu Leu Ala Ala Arg Ala

50

55

60

Ile Val Ala Ile Glu Asn Pro Ala Asp Val Ser Val Ile Ser Ser Arg

65

70

75

80

Asn Thr Gly Gln Arg Ala Val Leu Lys Phe Ala Ala Ala Thr Gly Ala

85

90

95

Thr Pro Ile Ala Gly Arg Phe Thr Pro Gly Thr Phe Thr Asn Gln Ile

100

105

110

Gln Ala Ala Phe Arg Glu Pro Arg Leu Leu Val Val Thr Asp Pro Arg

115

120

125

Ala Asp His Gln Pro Leu Thr Glu Ala Ser Tyr Val Asn Leu Pro Thr

130

135

140

Ile Ala Leu Cys Asn Thr Asp Ser Pro Leu Ala Tyr Val Asp Ile Ala
 145 150 155 160
 Ile Pro Cys Asn Asn Lys Gly Ala His Ser Val Gly Leu Met Trp Trp
 165 170 175
 Met Leu Ala Arg Glu Val Leu Arg Met Arg Gly Thr Ile Ser Arg Glu
 180 185 190
 His Pro Trp Glu Val Met Pro Asp Leu Tyr Phe Tyr Arg Asp Pro Glu
 195 200 205
 Glu Ile Glu Lys Glu Glu Gln Ala Ala Ala Glu Lys Ala Val Thr Lys
 210 215 220
 Glu Glu Phe Gln Gly Glu Trp Thr Ala Pro Ala Pro Glu Phe Thr Ala
 225 230 235 240
 Ala Gln Pro Glu Val Ala Asp Trp Ser Glu Gly Val Gln Val Pro Ser
 245 250 255
 Val Pro Ile Gln Gln Phe Pro Thr Glu Asp Trp Ser Ala Gln Pro Ala
 260 265 270
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 Gly Ala Thr Thr Glu Trp Ser
 290 295

<210> 675

<211> 704

<212> DNA

<213> Mus musculus

<400> 675

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<210> 676

<211> 513

<212> DNA

<213> Mus musculus

<400> 676

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 aggtcacca tgccaagaaa gaagctgccc agaagggtgg cactgttgct gctgctacct 180
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<210> 677

<211> 568

<212> DNA

<213> Mus musculus

<400> 677

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tctggcagta tggcaaccag tgaggaagag cggagctctc gggaatgcga gctctatgtg 180
cagaagcaca atatccaggc cctgctgaag gacccatcg tgcagctgtg cactacgcgg 240
cccagagaggc catggcattc cttcgggaat actttgagag gttggagaag gaggaggcaa 300
gacagattca gtgtctacag aaaaccggca tccgtactga ctcgaggag gacgagatct 360
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<210> 678

<211> 2125

<212> DNA

<213> Mus musculus

<400> 678

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tcaagactgg agaggccctt gcccttgctc aagctgcctg ctttgaactg ctgcaagctc 180
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<211> 5881

<212> DNA

<213> Mus musculus

<220>

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<222> (214).. (5700)

<400> 679

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 cagaacatac caccagccgt ttgagaatac aacatagcaa acttcactac tttaacaactt 180
 ccttgaattg gcgacagtac agagatctga aag atg gcc gac gag cgg aaa gat 234

Met Ala Asp Glu Arg Lys Asp

1

5

gaa gga aag gca cca cac tgg aca tca gcc tca ctc aca gag gca gct 282
 Glu Gly Lys Ala Pro His Trp Thr Ser Ala Ser Leu Thr Glu Ala Ala

10

15

20

gca cac cct cac tct cca gag atg aag gac cag ggt ggg gca ggg gaa 330
 Ala His Pro His Ser Pro Glu Met Lys Asp Gln Gly Gly Ala Gly Glu

25

30

35

ggg ctg agc cgc aac gcc aat gga ttt cca tac aga gag gag gag gaa 378
 Gly Leu Ser Arg Asn Ala Asn Gly Phe Pro Tyr Arg Glu Glu Glu Glu

40

45

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55

ggc gcc ttt ggg gag cac agg tca cag ggc acc tat tca gat acc aaa 426
 Gly Ala Phe Gly Glu His Arg Ser Gln Gly Thr Tyr Ser Asp Thr Lys

60

65

70

gag aac ggg atc aac gga gag ctg acc tca gct gac aga gaa aca gca 474

Glu Asn Gly Ile Asn Gly Glu Leu Thr Ser Ala Asp Arg Glu Thr Ala
 75 80 85
 gag gag gta tct gca agg ata gtt caa gta gtc aca gct gaa gct gta 522
 Glu Glu Val Ser Ala Arg Ile Val Gln Val Val Thr Ala Glu Ala Val
 90 95 100
 gca gtc ctg aaa gga gaa caa gag aag gaa gcc caa tac aag gac cag 570
 Ala Val Leu Lys Gly Glu Gln Glu Lys Glu Ala Gln Tyr Lys Asp Gln
 105 110 115
 cct gca gct ctg cct cta gca gcc gaa gaa aca gct aat ctg cca cct 618
 Pro Ala Ala Leu Pro Leu Ala Ala Glu Glu Thr Ala Asn Leu Pro Pro
 120 125 130 135
 tcc cca cca cca tcg cca gcc tcg gaa caa aca gcc aca gtg gag gaa 666
 Ser Pro Pro Pro Ser Pro Ala Ser Glu Gln Thr Ala Thr Val Glu Glu
 140 145 150
 gat tta ctt aca gcc tcg aag atg gaa ttc cct gag cag gag aaa ttt 714
 Asp Leu Leu Thr Ala Ser Lys Met Glu Phe Pro Glu Gln Glu Lys Phe
 155 160 165
 cct tcc tca ttc gct gag cct tta gac aag gga gaa atg gag ttt aag 762
 Pro Ser Ser Phe Ala Glu Pro Leu Asp Lys Gly Glu Met Glu Phe Lys
 170 175 180
 atg cca agt aag cct ggt gaa gac ttt gaa cat gct gcc tta gtt cct 810
 Met Pro Ser Lys Pro Gly Glu Asp Phe Glu His Ala Ala Leu Val Pro
 185 190 195
 gac aca agt aaa act cct cag gat aaa aag gat ctc caa ggc atg gaa 858
 Asp Thr Ser Lys Thr Pro Gln Asp Lys Lys Asp Leu Gln Gly Met Glu
 200 205 210 215
 gga gaa aag ttg cct cca gtt cca ttt gcg cag act ttc ggt acc aac 906
 Gly Glu Lys Leu Pro Pro Val Pro Phe Ala Gln Thr Phe Gly Thr Asn
 220 225 230

ctg gaa gac aga aaa cag agc aca gaa cca agc ata gtg atg cct agc 954
 Leu Glu Asp Arg Lys Gln Ser Thr Glu Pro Ser Ile Val Met Pro Ser
 235 240 245
 att ggc ctc tcg gca gag ccc cca gct cca aaa gag cca aaa gac tgg 1002
 Ile Gly Leu Ser Ala Glu Pro Pro Ala Pro Lys Glu Pro Lys Asp Trp
 250 255 260
 ttc att gaa atg ccc acg gaa tca aag aag gat gaa tgg ggt tta gct 1050
 Phe Ile Glu Met Pro Thr Glu Ser Lys Lys Asp Glu Trp Gly Leu Ala
 265 270 275
 gcc cca ata tct cct ggc ccc ttg aca ccc atg agg gaa aaa gat gtg 1098
 Ala Pro Ile Ser Pro Gly Pro Leu Thr Pro Met Arg Glu Lys Asp Val
 280 285 290 295
 cta gag gat atc cca aga tgg gaa ggg aag cag ttt gac tct ccc atg 1146
 Leu Glu Asp Ile Pro Arg Trp Glu Gly Lys Gln Phe Asp Ser Pro Met
 300 305 310
 cca agc ccc ttc cat ggt gga agt ttc act ctt ccc tta gac act atg 1194
 Pro Ser Pro Phe His Gly Gly Ser Phe Thr Leu Pro Leu Asp Thr Met
 315 320 325
 aag aat gag aga gtc tca gaa ggg cca cga ccc ttt gcc cct gtc ttc 1242
 Lys Asn Glu Arg Val Ser Glu Gly Pro Arg Pro Phe Ala Pro Val Phe
 330 335 340
 ttc caa tca gat gac aaa gtg tct ctg cag gac ccc agt gct cta gct 1290
 Phe Gln Ser Asp Asp Lys Val Ser Leu Gln Asp Pro Ser Ala Leu Ala
 345 350 355
 act tcc aaa gag agt tct aaa gat gag gag cca ctg aaa gat aaa gca 1338
 Thr Ser Lys Glu Ser Ser Lys Asp Glu Glu Pro Leu Lys Asp Lys Ala
 360 365 370 375
 gac aaa gtg gca gat gtt tcc atc tca gaa gtt acc act tta ctg gga 1386
 Asp Lys Val Ala Asp Val Ser Ile Ser Glu Val Thr Thr Leu Leu Gly

380	385	390	
aat gtt cat agt cca gtt gtg gaa ggc tat gtt ggg gag aac att tca			1434
Asn Val His Ser Pro Val Val Glu Gly Tyr Val Gly Glu Asn Ile Ser			
395	400	405	
gga gaa gta aag gtt acc acg gat caa gag aaa aag gag act tct gca			1482
Gly Glu Val Lys Val Thr Thr Asp Gln Glu Lys Lys Glu Thr Ser Ala			
410	415	420	
ccc agt gta cag gaa cct aca ctc act gaa act gaa cca cag aca aag			1530
Pro Ser Val Gln Glu Pro Thr Leu Thr Glu Thr Glu Pro Gln Thr Lys			
425	430	435	
ctt gat gag aaa tca act gtt tct atc gaa gaa gct gtg gca aaa gaa			1578
Leu Asp Glu Lys Ser Thr Val Ser Ile Glu Glu Ala Val Ala Lys Glu			
440	445	450	455
gag gaa tcc ttg aaa cta aga gat gat aaa aca ggt gta att cag act			1626
Glu Glu Ser Leu Lys Leu Arg Asp Asp Lys Thr Gly Val Ile Gln Thr			
460	465	470	
tcc acc gag cag tct ttc tcc aag gaa gac cag aaa ggc caa gaa cac			1674
Ser Thr Glu Gln Ser Phe Ser Lys Glu Asp Gln Lys Gly Gln Glu His			
475	480	485	
acg att gat gag tta aaa caa gac tcc ttc cct ata agt ctg gaa caa			1722
Thr Ile Asp Glu Leu Lys Gln Asp Ser Phe Pro Ile Ser Leu Glu Gln			
490	495	500	
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Ala Val Thr Asp Ala Ala Met Thr Ser Lys Thr Leu Gly Lys Val Thr			
505	510	515	
tct gag cca gag gca gta agt gaa agg aga gaa atc cag gga ctt ttt			1818
Ser Glu Pro Glu Ala Val Ser Glu Arg Arg Glu Ile Gln Gly Leu Phe			
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gaa gag aaa aca gct gac aaa aat aag ctt gaa ggc gct ggg tct gcg			1866

Glu Glu Lys Thr Ala Asp Lys Asn Lys Leu Glu Gly Ala Gly Ser Ala
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 Ala Gln Glu Ser Leu Asp Thr Ile Ser Pro Lys Asn Gln His Asp Glu
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 Ala Gly Tyr Ser Thr Leu Ala Gln Ser Tyr Thr Pro Gly His Pro Ser
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 665 670 675
 gac gat ctg aca ctt agt cga agc tta ggg ctt ggt gga agg tct gca 2298
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 680 685 690 695

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Ile Glu Gln Arg Ser Met Ser Ile Asn Leu Pro Met Ser Cys Leu Asp	
700 705 710	
tcc att gcc ctt ggg ttt aac ttt ggc cgg ggc cat gat ctt tcc cct	2394
Ser Ile Ala Leu Gly Phe Asn Phe Gly Arg Gly His Asp Leu Ser Pro	
715 720 725	
ctg gct tct gat att cta acc aac act agt gga agc atg gat gaa gga	2442
Leu Ala Ser Asp Ile Leu Thr Asn Thr Ser Gly Ser Met Asp Glu Gly	
730 735 740	
gat gat tac ctg ccc ccc acc aca cct gca gtg gag aag atg cca tgc	2490
Asp Asp Tyr Leu Pro Pro Thr Thr Pro Ala Val Glu Lys Met Pro Cys	
745 750 755	
ttt cct ata gag agc aaa gag gaa gaa gat aag gca gag caa gca aaa	2538
Phe Pro Ile Glu Ser Lys Glu Glu Glu Asp Lys Ala Glu Gln Ala Lys	
760 765 770 775	
gtg act gga ggg caa act atc caa gtt gaa aca tcc tca gag tca ccc	2586
Val Thr Gly Gly Gln Thr Ile Gln Val Glu Thr Ser Ser Glu Ser Pro	
780 785 790	
ttt cca gcc aaa gaa tat tac aaa aat ggt act gtc atg gcc cct gac	2634
Phe Pro Ala Lys Glu Tyr Tyr Lys Asn Gly Thr Val Met Ala Pro Asp	
795 800 805	
ctg ccc gag atg cta gat ctg gca gga acc agg tcc aga tta gct tct	2682
Leu Pro Glu Met Leu Asp Leu Ala Gly Thr Arg Ser Arg Leu Ala Ser	
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Val Ser Ala Asp Ala Glu Val Ala Arg Arg Lys Ser Val Pro Ser Glu	
825 830 835	
gct atg ctt gca gag agt agt acc agt ttg cca cct gtc gct gat gaa	2778
Ala Met Leu Ala Glu Ser Ser Thr Ser Leu Pro Pro Val Ala Asp Glu	

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Ser Pro Val Thr Val Lys Pro Asp Ser Gln Leu Glu Asp Met Gly Tyr				
	860	865	870	
tgt gtg ttc aac aag tac aca gtc cct ctc cca tca cca gtt caa gac				2874
Cys Val Phe Asn Lys Tyr Thr Val Pro Leu Pro Ser Pro Val Gln Asp				
	875	880	885	
agt gag aat ttg tca gga gag agt ggt tca ttt tat gaa gga act gat				2922
Ser Glu Asn Leu Ser Gly Glu Ser Gly Ser Phe Tyr Glu Gly Thr Asp				
	890	895	900	
gac aaa gtc cgt aga gat ttg gcc acc gac ctt tca cta att gaa gta				2970
Asp Lys Val Arg Arg Asp Leu Ala Thr Asp Leu Ser Leu Ile Glu Val				
	905	910	915	
aaa ctt gca gct gct gga aga gtc aaa gat gag ttc act gct gag aaa				3018
Lys Leu Ala Ala Ala Gly Arg Val Lys Asp Glu Phe Thr Ala Glu Lys				
	920	925	930	935
gag gct act cca ccc act tct gct gac aaa tca gga ctg agt agg gag				3066
Glu Ala Thr Pro Pro Thr Ser Ala Asp Lys Ser Gly Leu Ser Arg Glu				
	940	945	950	
ttt gac cat gac agg aaa gct aat gac aag ctg gac act gtc cta gaa				3114
Phe Asp His Asp Arg Lys Ala Asn Asp Lys Leu Asp Thr Val Leu Glu				
	955	960	965	
aag agt gaa gag cat att gat tca aaa gaa cat gcc aag gag tca gaa				3162
Lys Ser Glu Glu His Ile Asp Ser Lys Glu His Ala Lys Glu Ser Glu				
	970	975	980	
gag atg ggg ggt aaa gta gag ctc ttc gga tta ggt ata act tat gat				3210
Glu Met Gly Gly Lys Val Glu Leu Phe Gly Leu Gly Ile Thr Tyr Asp				
	985	990	995	
caa gcc tcc acc aaa gaa ctg ata aca act aag gat aca tcg cct gag				3258

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 aaa aca gag aaa ggt ctc agt tca gtg cca gag gta gct gag gtc gag 3306
 Lys Thr Glu Lys Gly Leu Ser Ser Val Pro Glu Val Ala Glu Val Glu
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 cca acc aca aaa gct gat caa ggt cta gat ttt gct gca acg aaa gct 3354
 Pro Thr Thr Lys Ala Asp Gln Gly Leu Asp Phe Ala Ala Thr Lys Ala
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 Glu Pro Ser Gln Leu Asp Ile Lys Val Ser Asp Phe Gly Gln Met Ala
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 Ser Gly Met Asn Val Asp Ala Gly Lys Ala Ile Glu Leu Lys Phe Glu
 1065 1070 1075
 gtt gct cag gag ctg acg ctc tca tcc gaa gca cct caa gaa gca gat 3498
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 1080 1085 1090 1095
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 aat gaa aca gaa gtc aag gag aag gtg aca aag cct gat ttg gtg cat 3594
 Asn Glu Thr Glu Val Lys Glu Lys Val Thr Lys Pro Asp Leu Val His
 1115 1120 1125
 cag gag gct gta gac aaa gaa gag tcc tat gag tct agc ggt gag cat 3642
 Gln Glu Ala Val Asp Lys Glu Glu Ser Tyr Glu Ser Ser Gly Glu His
 1130 1135 1140
 gaa agc ctc act atg gag tct ctg aag cct gat gag ggc aag aaa gaa 3690
 Glu Ser Leu Thr Met Glu Ser Leu Lys Pro Asp Glu Gly Lys Lys Glu
 1145 1150 1155

aca tct cca gag aca tca ctg atc caa gat gag gtt gcc ctc aag ctg 3738
 Thr Ser Pro Glu Thr Ser Leu Ile Gln Asp Glu Val Ala Leu Lys Leu
 1160 1165 1170 1175
 tct gta gaa atc cct tgc ccg cct cca gtt tcc gaa gct gat tta tcc 3786
 Ser Val Glu Ile Pro Cys Pro Pro Pro Val Ser Glu Ala Asp Leu Ser
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 acg gat gag aag ggt gag gtc cag atg gaa ttc att cag ctg cca aag 3834
 Thr Asp Glu Lys Gly Glu Val Gln Met Glu Phe Ile Gln Leu Pro Lys
 1195 1200 1205
 gaa gag agc aca gag act ccg gat ata cct gcc ata cct tct gat gtc 3882
 Glu Glu Ser Thr Glu Thr Pro Asp Ile Pro Ala Ile Pro Ser Asp Val
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 acc cag cca cag cct gaa gca att gtg tcc gaa cca gca gag gtc cca 3930
 Thr Gln Pro Gln Pro Glu Ala Ile Val Ser Glu Pro Ala Glu Val Pro
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 agt gag gaa gaa gag ata gaa gct ggg gga gag tat gac aaa ctg ctc 3978
 Ser Glu Glu Glu Glu Ile Glu Ala Gly Gly Glu Tyr Asp Lys Leu Leu
 1240 1245 1250 1255
 ttc cgc tca gat acc ctc cag atc tcc gac ctg ctt gtt tca gaa agt 4026
 Phe Arg Ser Asp Thr Leu Gln Ile Ser Asp Leu Leu Val Ser Glu Ser
 1260 1265 1270
 agg gag gag ttt gtg gag acc tgc cca ggt gag ctc aaa ggt gtg gtt 4074
 Arg Glu Glu Phe Val Glu Thr Cys Pro Gly Glu Leu Lys Gly Val Val
 1275 1280 1285
 gag tct gtg gtg acc atc gag gat gat ttc atc act gta gta caa acc 4122
 Glu Ser Val Val Thr Ile Glu Asp Asp Phe Ile Thr Val Val Gln Thr
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 Thr Thr Asp Glu Gly Glu Ser Gly Ser His Ser Val Arg Phe Ala Ala

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Pro Ala Gln Pro Glu Glu Glu Arg Arg Pro Arg Pro His Asp Glu Glu			
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ctt gaa ata gag atg gca gca gaa gcc cag gca gaa ccc aag gat ggc			4266
Leu Glu Ile Glu Met Ala Ala Glu Ala Gln Ala Glu Pro Lys Asp Gly			
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tct cca gat gct cca gct acc cct gag aaa gaa gag gtt gcg ttt tca			4314
Ser Pro Asp Ala Pro Ala Thr Pro Glu Lys Glu Glu Val Ala Phe Ser			
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gaa tat aaa aca gaa act tac gac gat tac aaa gac gag acc acc att			4362
Glu Tyr Lys Thr Glu Thr Tyr Asp Asp Tyr Lys Asp Glu Thr Thr Ile			
	1370	1375	1380
gat gac tcc att atg gac gcc gac agc ctg tgg gta gac act caa gat			4410
Asp Asp Ser Ile Met Asp Ala Asp Ser Leu Trp Val Asp Thr Gln Asp			
	1385	1390	1395
gat gat aga agc atc ttg aca gag cag tta gaa act att cct aaa gag			4458
Asp Asp Arg Ser Ile Leu Thr Glu Gln Leu Glu Thr Ile Pro Lys Glu			
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gag aga gct gag aag gat gct cgg aga ccg tct ctc gag aaa cat aga			4506
Glu Arg Ala Glu Lys Asp Ala Arg Arg Pro Ser Leu Glu Lys His Arg			
	1420	1425	1430
aaa gaa aag cct ttt aaa acc ggg aga ggc aga att tcc act cct gaa			4554
Lys Glu Lys Pro Phe Lys Thr Gly Arg Gly Arg Ile Ser Thr Pro Glu			
	1435	1440	1445
aga aaa gta gct aaa aag gaa cct agc acg gtc tcc agg gat gaa gtg			4602
Arg Lys Val Ala Lys Lys Glu Pro Ser Thr Val Ser Arg Asp Glu Val			
	1450	1455	1460
aga agg aaa aaa gca gtt tat aag aag gct gaa ctt gct aaa aaa tca			4650

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 Glu Val Gln Ala His Ser Pro Ser Arg Lys Leu Ile Leu Lys Pro Ala
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 atc aaa tac act aga cca act cat ctc tcc tgt gtt aag cgg aaa acc 4746
 Ile Lys Tyr Thr Arg Pro Thr His Leu Ser Cys Val Lys Arg Lys Thr
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 Ser Gly Thr Ser Thr Pro Thr Thr Pro Gly Ser Thr Ala Ile Thr Pro
 1595 1600 1605
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 Gly Thr Pro Pro Ser Tyr Ser Ser Arg Thr Pro Gly Thr Pro Gly Thr
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ccg agc tac ccc agg aca cca gga acc ccc aaa tct ggc atc ctg gtg 5130
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 1675 1680 1685
 cct aag ggg ggt cag gta caa att gtt act aag aag ata gac tta agc 5322
 Pro Lys Gly Gly Gln Val Gln Ile Val Thr Lys Lys Ile Asp Leu Ser
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 cat gtg aca tcc aaa tgt ggc tct cta aag aac atc cgt cac agg cca 5370
 His Val Thr Ser Lys Cys Gly Ser Leu Lys Asn Ile Arg His Arg Pro
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 Gly Gly Gly Arg Val Lys Ile Glu Ser Val Lys Leu Asp Phe Lys Glu
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 aag gcc caa gct aaa gtt ggc tca ctt gac aat gct cac cac gta cct 5466
 Lys Ala Gln Ala Lys Val Gly Ser Leu Asp Asn Ala His His Val Pro
 1740 1745 1750
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 Gly Gly Gly Asn Val Lys Ile Asp Ser Gln Lys Leu Asn Phe Arg Glu
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 His Ala Lys Ala Arg Val Asp His Gly Ala Glu Ile Ile Thr Gln Ser

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Pro Ser Arg Ser Ser Val Ala Ser Pro Arg Arg Leu Ser Asn Val Ser			
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tct tct gga agc atc aac ctg ctc gaa tcc cct cag ctt gcc act ttg	5658		
Ser Ser Gly Ser Ile Asn Leu Leu Glu Ser Pro Gln Leu Ala Thr Leu			
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gct gag gat gtc act gca gcg ctt gct aag cag ggc ttg tga	5700		
Ala Glu Asp Val Thr Ala Ala Leu Ala Lys Gln Gly Leu			
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<211> 1828

<212> PRT

<213> Mus musculus

<400> 680

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10

15

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20

25

30

Asp Gln Gly Gly Ala Gly Glu Gly Leu Ser Arg Asn Ala Asn Gly Phe

35

40

45

Pro Tyr Arg Glu Glu Glu Glu Gly Ala Phe Gly Glu His Arg Ser Gln

50

55

60

Gly Thr Tyr Ser Asp Thr Lys Glu Asn Gly Ile Asn Gly Glu Leu Thr
 65 70 75 80
 Ser Ala Asp Arg Glu Thr Ala Glu Glu Val Ser Ala Arg Ile Val Gln
 85 90 95
 Val Val Thr Ala Glu Ala Val Ala Val Leu Lys Gly Glu Gln Glu Lys
 100 105 110
 Glu Ala Gln Tyr Lys Asp Gln Pro Ala Ala Leu Pro Leu Ala Ala Glu
 115 120 125
 Glu Thr Ala Asn Leu Pro Pro Ser Pro Pro Pro Ser Pro Ala Ser Glu
 130 135 140
 Gln Thr Ala Thr Val Glu Glu Asp Leu Leu Thr Ala Ser Lys Met Glu
 145 150 155 160
 Phe Pro Glu Gln Glu Lys Phe Pro Ser Ser Phe Ala Glu Pro Leu Asp
 165 170 175
 Lys Gly Glu Met Glu Phe Lys Met Pro Ser Lys Pro Gly Glu Asp Phe
 180 185 190
 Glu His Ala Ala Leu Val Pro Asp Thr Ser Lys Thr Pro Gln Asp Lys
 195 200 205
 Lys Asp Leu Gln Gly Met Glu Gly Glu Lys Leu Pro Pro Val Pro Phe
 210 215 220
 Ala Gln Thr Phe Gly Thr Asn Leu Glu Asp Arg Lys Gln Ser Thr Glu
 225 230 235 240
 Pro Ser Ile Val Met Pro Ser Ile Gly Leu Ser Ala Glu Pro Pro Ala
 245 250 255
 Pro Lys Glu Pro Lys Asp Trp Phe Ile Glu Met Pro Thr Glu Ser Lys
 260 265 270
 Lys Asp Glu Trp Gly Leu Ala Ala Pro Ile Ser Pro Gly Pro Leu Thr
 275 280 285
 Pro Met Arg Glu Lys Asp Val Leu Glu Asp Ile Pro Arg Trp Glu Gly

290	295	300	
Lys Gln Phe Asp Ser Pro Met Pro Ser Pro Phe His Gly Gly Ser Phe			
305	310	315	320
Thr Leu Pro Leu Asp Thr Met Lys Asn Glu Arg Val Ser Glu Gly Pro			
325	330	335	
Arg Pro Phe Ala Pro Val Phe Phe Gln Ser Asp Asp Lys Val Ser Leu			
340	345	350	
Gln Asp Pro Ser Ala Leu Ala Thr Ser Lys Glu Ser Ser Lys Asp Glu			
355	360	365	
Glu Pro Leu Lys Asp Lys Ala Asp Lys Val Ala Asp Val Ser Ile Ser			
370	375	380	
Glu Val Thr Thr Leu Leu Gly Asn Val His Ser Pro Val Val Glu Gly			
385	390	395	400
Tyr Val Gly Glu Asn Ile Ser Gly Glu Val Lys Val Thr Thr Asp Gln			
405	410	415	
Glu Lys Lys Glu Thr Ser Ala Pro Ser Val Gln Glu Pro Thr Leu Thr			
420	425	430	
Glu Thr Glu Pro Gln Thr Lys Leu Asp Glu Lys Ser Thr Val Ser Ile			
435	440	445	
Glu Glu Ala Val Ala Lys Glu Glu Glu Ser Leu Lys Leu Arg Asp Asp			
450	455	460	
Lys Thr Gly Val Ile Gln Thr Ser Thr Glu Gln Ser Phe Ser Lys Glu			
465	470	475	480
Asp Gln Lys Gly Gln Glu His Thr Ile Asp Glu Leu Lys Gln Asp Ser			
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Phe Pro Ile Ser Leu Glu Gln Ala Val Thr Asp Ala Ala Met Thr Ser			
500	505	510	
Lys Thr Leu Gly Lys Val Thr Ser Glu Pro Glu Ala Val Ser Glu Arg			
515	520	525	

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 545 550 555 560
 Tyr Glu Asp Lys Ser Gly Met Ser Lys Tyr Phe Glu Thr Ser Ala Leu
 565 570 575
 Lys Glu Asp Met Thr Arg Ser Thr Glu Leu Gly Ser Asp Tyr Tyr Glu
 580 585 590
 Leu Ser Asp Ser Arg Gly Ser Ala Gln Glu Ser Leu Asp Thr Ile Ser
 595 600 605
 Pro Lys Asn Gln His Asp Glu Lys Glu Leu Gln Ala Lys Ala Ser Gln
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 Pro Ser Pro Pro Ala Gln Glu Ala Gly Tyr Ser Thr Leu Ala Gln Ser
 625 630 635 640
 Tyr Thr Pro Gly His Pro Ser Glu Leu Pro Glu Glu Pro Ser Ser Pro
 645 650 655
 Gln Glu Arg Met Phe Thr Ile Asp Pro Lys Val Tyr Gly Glu Lys Arg
 660 665 670
 Asp Leu His Ser Lys Asn Lys Asp Asp Leu Thr Leu Ser Arg Ser Leu
 675 680 685
 Gly Leu Gly Gly Arg Ser Ala Ile Glu Gln Arg Ser Met Ser Ile Asn
 690 695 700
 Leu Pro Met Ser Cys Leu Asp Ser Ile Ala Leu Gly Phe Asn Phe Gly
 705 710 715 720
 Arg Gly His Asp Leu Ser Pro Leu Ala Ser Asp Ile Leu Thr Asn Thr
 725 730 735
 Ser Gly Ser Met Asp Glu Gly Asp Asp Tyr Leu Pro Pro Thr Thr Pro
 740 745 750
 Ala Val Glu Lys Met Pro Cys Phe Pro Ile Glu Ser Lys Glu Glu Glu

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Glu Thr Ser Ser Glu Ser Pro Phe Pro Ala Lys Glu Tyr Tyr Lys Asn		
785	790	795
Gly Thr Val Met Ala Pro Asp Leu Pro Glu Met Leu Asp Leu Ala Gly		
805	810	815
Thr Arg Ser Arg Leu Ala Ser Val Ser Ala Asp Ala Glu Val Ala Arg		
820	825	830
Arg Lys Ser Val Pro Ser Glu Ala Met Leu Ala Glu Ser Ser Thr Ser		
835	840	845
Leu Pro Pro Val Ala Asp Glu Ser Pro Val Thr Val Lys Pro Asp Ser		
850	855	860
Gln Leu Glu Asp Met Gly Tyr Cys Val Phe Asn Lys Tyr Thr Val Pro		
865	870	875
Leu Pro Ser Pro Val Gln Asp Ser Glu Asn Leu Ser Gly Glu Ser Gly		
885	890	895
Ser Phe Tyr Glu Gly Thr Asp Asp Lys Val Arg Arg Asp Leu Ala Thr		
900	905	910
Asp Leu Ser Leu Ile Glu Val Lys Leu Ala Ala Ala Gly Arg Val Lys		
915	920	925
Asp Glu Phe Thr Ala Glu Lys Glu Ala Thr Pro Pro Thr Ser Ala Asp		
930	935	940
Lys Ser Gly Leu Ser Arg Glu Phe Asp His Asp Arg Lys Ala Asn Asp		
945	950	955
Lys Leu Asp Thr Val Leu Glu Lys Ser Glu Glu His Ile Asp Ser Lys		
965	970	975
Glu His Ala Lys Glu Ser Glu Glu Met Gly Gly Lys Val Glu Leu Phe		
980	985	990

Gly Leu Gly Ile Thr Tyr Asp Gln Ala Ser Thr Lys Glu Leu Ile Thr
 995 1000 1005
 Thr Lys Asp Thr Ser Pro Glu Lys Thr Glu Lys Gly Leu Ser Ser Val
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 Pro Glu Val Ala Glu Val Glu Pro Thr Thr Lys Ala Asp Gln Gly Leu
 1025 1030 1035 1040
 Asp Phe Ala Ala Thr Lys Ala Glu Pro Ser Gln Leu Asp Ile Lys Val
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 1060 1065 1070
 Ala Ile Glu Leu Lys Phe Glu Val Ala Gln Glu Leu Thr Leu Ser Ser
 1075 1080 1085
 Glu Ala Pro Gln Glu Ala Asp Ser Phe Met Gly Val Glu Ser Gly His
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 1105 1110 1115 1120
 Thr Lys Pro Asp Leu Val His Gln Glu Ala Val Asp Lys Glu Glu Ser
 1125 1130 1135
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 Pro Asp Glu Gly Lys Lys Glu Thr Ser Pro Glu Thr Ser Leu Ile Gln
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 Asp Glu Val Ala Leu Lys Leu Ser Val Glu Ile Pro Cys Pro Pro Pro
 1170 1175 1180
 Val Ser Glu Ala Asp Leu Ser Thr Asp Glu Lys Gly Glu Val Gln Met
 1185 1190 1195 1200
 Glu Phe Ile Gln Leu Pro Lys Glu Glu Ser Thr Glu Thr Pro Asp Ile
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 Pro Ala Ile Pro Ser Asp Val Thr Gln Pro Gln Pro Glu Ala Ile Val

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1235	1240	1245	
Gly Glu Tyr Asp Lys Leu Leu Phe Arg Ser Asp Thr Leu Gln Ile Ser			
1250	1255	1260	
Asp Leu Leu Val Ser Glu Ser Arg Glu Glu Phe Val Glu Thr Cys Pro			
265	1270	1275	1280
Gly Glu Leu Lys Gly Val Val Glu Ser Val Val Thr Ile Glu Asp Asp			
1285	1290	1295	
Phe Ile Thr Val Val Gln Thr Thr Thr Asp Glu Gly Glu Ser Gly Ser			
1300	1305	1310	
His Ser Val Arg Phe Ala Ala Pro Ala Gln Pro Glu Glu Glu Arg Arg			
1315	1320	1325	
Pro Arg Pro His Asp Glu Glu Leu Glu Ile Glu Met Ala Ala Glu Ala			
1330	1335	1340	
Gln Ala Glu Pro Lys Asp Gly Ser Pro Asp Ala Pro Ala Thr Pro Glu			
345	1350	1355	1360
Lys Glu Glu Val Ala Phe Ser Glu Tyr Lys Thr Glu Thr Tyr Asp Asp			
1365	1370	1375	
Tyr Lys Asp Glu Thr Thr Ile Asp Asp Ser Ile Met Asp Ala Asp Ser			
1380	1385	1390	
Leu Trp Val Asp Thr Gln Asp Asp Asp Arg Ser Ile Leu Thr Glu Gln			
1395	1400	1405	
Leu Glu Thr Ile Pro Lys Glu Glu Arg Ala Glu Lys Asp Ala Arg Arg			
1410	1415	1420	
Pro Ser Leu Glu Lys His Arg Lys Glu Lys Pro Phe Lys Thr Gly Arg			
425	1430	1435	1440
Gly Arg Ile Ser Thr Pro Glu Arg Lys Val Ala Lys Lys Glu Pro Ser			
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 1475 1480 1485
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 Thr Asp Asn Ile Lys Tyr Gln Pro Lys Gly Gly Gln Val Gln Ile Val

1685	1690	1695	
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Lys Asn Ile Arg His Arg Pro Gly Gly Gly Arg Val Lys Ile Glu Ser			
1715	1720	1725	
Val Lys Leu Asp Phe Lys Glu Lys Ala Gln Ala Lys Val Gly Ser Leu			
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Asp Asn Ala His His Val Pro Gly Gly Gly Asn Val Lys Ile Asp Ser			
745	1750	1755	1760
Gln Lys Leu Asn Phe Arg Glu His Ala Lys Ala Arg Val Asp His Gly			
1765	1770	1775	
Ala Glu Ile Ile Thr Gln Ser Pro Ser Arg Ser Ser Val Ala Ser Pro			
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Arg Arg Leu Ser Asn Val Ser Ser Ser Gly Ser Ile Asn Leu Leu Glu			
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<211> 202

<212> DNA

<213> Mus musculus

<400> 681

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<211> 3147

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<213> Mus musculus

<220>

<221> CDS

<222> (1457).. (2944)

<400> 683

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 gcacctgct ttcate atg acg gtg atg tgc ggg gag aat gcg gac gag gct 1492

Met Thr Val Met Ser Gly Glu Asn Ala Asp Glu Ala

1

5

10

tgc acc gct cca ggt cac ccc cag gat ggc agc tac ccg agg cag gcg 1540
 Ser Thr Ala Pro Gly His Pro Gln Asp Gly Ser Tyr Pro Arg Gln Ala

15

20

25

gac cac gac gac cac gaa tgc tgc gag cgc gta gta atc aac atc tcc 1588
 Asp His Asp Asp His Glu Cys Cys Glu Arg Val Val Ile Asn Ile Ser

30

35

40

ggg ctg cgc ttc gaa acg cag ctc aag act ctg gca cag ttc ccc aac 1636
 Gly Leu Arg Phe Glu Thr Gln Leu Lys Thr Leu Ala Gln Phe Pro Asn

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acg ctg ctg ggc aac ccg aag aaa cgc atg cgc tac ttt gac ccc ctg 1684
 Thr Leu Leu Gly Asn Pro Lys Lys Arg Met Arg Tyr Phe Asp Pro Leu

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agg aac gag tac ttc ttt gac cgc aac cgg ccc agc ttc gat gcc atc 1732
 Arg Asn Glu Tyr Phe Phe Asp Arg Asn Arg Pro Ser Phe Asp Ala Ile

80

85

90

ctt tat tac tac cag tcc ggg ggc cgc ctg cgc agg ccg gtc aac gtg 1780
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 Pro Leu Asp Met Phe Ser Glu Glu Ile Lys Phe Tyr Glu Leu Gly Glu
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 Glu Ala Met Glu Lys Phe Arg Glu Asp Glu Gly Phe Ile Lys Glu Glu
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 Leu Pro Glu Leu Lys Asp Asp Lys Asp Phe Thr Gly Thr Ile His Arg
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 atc gac aac acc aca gtc atc tat act tcc aac atc ttc aca gac cct 2116
 Ile Asp Asn Thr Thr Val Ile Tyr Thr Ser Asn Ile Phe Thr Asp Pro
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Ile Met Asn Phe Ile Asp Ile Val Ala Ile Ile Pro Tyr Phe Ile Thr			
255	260	265	
ctg ggc acg gag ata gct gag cag gag gga aat cag aag ggc gag cag			2308
Leu Gly Thr Glu Ile Ala Glu Gln Glu Gly Asn Gln Lys Gly Glu Gln			
270	275	280	
gcc act tcc ctg gcc atc ctc agg gtc atc cgc ttg gta agg gtg ttc			2356
Ala Thr Ser Leu Ala Ile Leu Arg Val Ile Arg Leu Val Arg Val Phe			
285	290	295	300
aga atc ttc aaa ctc tcc cgc cac tcc aag ggc ctt cag atc ctg ggc			2404
Arg Ile Phe Lys Leu Ser Arg His Ser Lys Gly Leu Gln Ile Leu Gly			
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cag acc ctc aaa gct agt atg agg gag tta ggg ctg ctc atc ttt ttc			2452
Gln Thr Leu Lys Ala Ser Met Arg Glu Leu Gly Leu Leu Ile Phe Phe			
320	325	330	
ctc ttc att ggg gtc ata ctg ttt tct agc gca gtg tac ttt gcg gag			2500
Leu Phe Ile Gly Val Ile Leu Phe Ser Ser Ala Val Tyr Phe Ala Glu			
335	340	345	
gcg gaa gaa gct gag tcg cac ttc tcc agt atc ccc gat gct ttc tgg			2548
Ala Glu Glu Ala Glu Ser His Phe Ser Ser Ile Pro Asp Ala Phe Trp			
350	355	360	
tgg gcg gtg gtg tcc atg acc act gtg gga tac ggt gac atg tac cct			2596
Trp Ala Val Val Ser Met Thr Thr Val Gly Tyr Gly Asp Met Tyr Pro			
365	370	375	380
gtg aca att gga ggc aag atc gtg ggc tcc ttg tgt gcc atc gct ggt			2644
Val Thr Ile Gly Gly Lys Ile Val Gly Ser Leu Cys Ala Ile Ala Gly			
385	390	395	
gtg ctg aca att gcc ctg ccc gta cct gtc att gtg tcc aat ttc aac			2692

Val Leu Thr Ile Ala Leu Pro Val Pro Val Ile Val Ser Asn Phe Asn
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 His Val Ser Ser Pro Asn Leu Ala Ser Asp Ser Asp Leu Ser Arg Arg
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 445 450 455 460
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<210> 684

<211> 495

<212> PRT

<213> Mus musculus

<400> 684

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 Glu Thr Gln Leu Lys Thr Leu Ala Gln Phe Pro Asn Thr Leu Leu Gly
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 Asn Pro Lys Lys Arg Met Arg Tyr Phe Asp Pro Leu Arg Asn Glu Tyr
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 Gln Ser Gly Gly Arg Leu Arg Arg Pro Val Asn Val Pro Leu Asp Met
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 Phe Ser Glu Glu Ile Lys Phe Tyr Glu Leu Gly Glu Glu Ala Met Glu
 115 120 125
 Lys Phe Arg Glu Asp Glu Gly Phe Ile Lys Glu Glu Glu Arg Pro Leu
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 Pro Glu Lys Glu Tyr Gln Arg Gln Val Trp Leu Leu Phe Glu Tyr Pro
 145 150 155 160
 Glu Ser Ser Gly Pro Ala Arg Val Ile Ala Ile Val Ser Val Met Val
 165 170 175
 Ile Leu Ile Ser Ile Val Ile Phe Cys Leu Glu Thr Leu Pro Glu Leu
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 Lys Asp Asp Lys Asp Phe Thr Gly Thr Ile His Arg Ile Asp Asn Thr
 195 200 205
 Thr Val Ile Tyr Thr Ser Asn Ile Phe Thr Asp Pro Phe Phe Ile Val
 210 215 220

Glu Thr Leu Cys Ile Ile Trp Phe Ser Phe Glu Leu Val Val Arg Phe
 225 230 235 240
 Phe Ala Cys Pro Ser Lys Thr Asp Phe Phe Lys Asn Ile Met Asn Phe
 245 250 255
 Ile Asp Ile Val Ala Ile Ile Pro Tyr Phe Ile Thr Leu Gly Thr Glu
 260 265 270
 Ile Ala Glu Gln Glu Gly Asn Gln Lys Gly Glu Gln Ala Thr Ser Leu
 275 280 285
 Ala Ile Leu Arg Val Ile Arg Leu Val Arg Val Phe Arg Ile Phe Lys
 290 295 300
 Leu Ser Arg His Ser Lys Gly Leu Gln Ile Leu Gly Gln Thr Leu Lys
 305 310 315 320
 Ala Ser Met Arg Glu Leu Gly Leu Leu Ile Phe Phe Leu Phe Ile Gly
 325 330 335
 Val Ile Leu Phe Ser Ser Ala Val Tyr Phe Ala Glu Ala Glu Glu Ala
 340 345 350
 Glu Ser His Phe Ser Ser Ile Pro Asp Ala Phe Trp Trp Ala Val Val
 355 360 365
 Ser Met Thr Thr Val Gly Tyr Gly Asp Met Tyr Pro Val Thr Ile Gly
 370 375 380
 Gly Lys Ile Val Gly Ser Leu Cys Ala Ile Ala Gly Val Leu Thr Ile
 385 390 395 400
 Ala Leu Pro Val Pro Val Ile Val Ser Asn Phe Asn Tyr Phe Tyr His
 405 410 415
 Arg Glu Thr Glu Gly Glu Glu Gln Ala Gln Leu Leu His Val Ser Ser
 420 425 430
 Pro Asn Leu Ala Ser Asp Ser Asp Leu Ser Arg Arg Ser Ser Ser Thr
 435 440 445
 Ile Ser Lys Ser Glu Tyr Met Glu Ile Glu Glu Asp Met Asn Asn Ser

450 455 460
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 485 490 495

<210> 685

<211> 1030

<212> DNA

<213> Mus musculus

<400> 685

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 aaaggaggag agcaagaagg agagaaaaga cgacaaagag aaggagaaga gcgacgcagc 420
 gaagaaagaa gagaaaaagg agaaaaagta aatgggtgtg cttttttaat tagtaaatta 480
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1030

<210> 686

<211> 1286

<212> DNA

<213> Mus musculus

<400> 686

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1286

<210> 687

<211> 980

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (26).. (769)

<400> 687

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                               1           5
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Glu Leu Arg Asn Arg Thr Pro Ser Asp Val Lys Glu Leu Val Leu Asp
  10           15           20           25
aac tgt aag tca att gaa ggc aaa atc gaa ggc ctc acg gat gag ttt      148
Asn Cys Lys Ser Ile Glu Gly Lys Ile Glu Gly Leu Thr Asp Glu Phe
          30           35           40
gaa gaa ctg gaa ttc cta agt aca atc aac gta ggc ctc acc tcc att      196
Glu Glu Leu Glu Phe Leu Ser Thr Ile Asn Val Gly Leu Thr Ser Ile
          45           50           55
tcc aac tta cca aag tta aac aaa ctc aag aag ctt gaa tta agc gaa      244
Ser Asn Leu Pro Lys Leu Asn Lys Leu Lys Lys Leu Glu Leu Ser Glu
          60           65           70
aac aga atc tca ggg gac ctg gaa gta ttg gca gag aaa tgt ccg aac      292
Asn Arg Ile Ser Gly Asp Leu Glu Val Leu Ala Glu Lys Cys Pro Asn

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90	95	100	105
ata gag ccg ctg aag aag tta gag aat ctc aag agc cta gac ctg ttt	388		
Ile Glu Pro Leu Lys Lys Leu Glu Asn Leu Lys Ser Leu Asp Leu Phe			
110	115	120	
aac tgt gag gtg acc aac ctg aat gcc tac cga gaa aac gtg ttc aag	436		
Asn Cys Glu Val Thr Asn Leu Asn Ala Tyr Arg Glu Asn Val Phe Lys			
125	130	135	
ctc ctg ccc cag gtc atg tac ctc gat ggc tat gac agg gac aac aag	484		
Leu Leu Pro Gln Val Met Tyr Leu Asp Gly Tyr Asp Arg Asp Asn Lys			
140	145	150	
gag gcc ccc gac tcc gat gtt gag ggc tac gtg gag gat gac gac gag	532		
Glu Ala Pro Asp Ser Asp Val Glu Gly Tyr Val Glu Asp Asp Asp Glu			
155	160	165	
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Glu Asp Glu Asp Glu Glu Glu Tyr Asp Glu Tyr Ala Gln Leu Val Glu			
170	175	180	185
gat gaa gag gaa gag gtt gag gag gaa gaa ggg gag gaa gag gat gtg	628		
Asp Glu Glu Glu Glu Val Glu Glu Glu Glu Gly Glu Glu Glu Asp Val			
190	195	200	
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Ser Gly Glu Glu Glu Glu Asp Glu Glu Gly Tyr Asn Asp Gly Glu Val			
205	210	215	
gat gac gag gaa gac gaa gaa gaa gct ggt gaa gaa gaa ggg agt cag	724		
Asp Asp Glu Glu Asp Glu Glu Glu Ala Gly Glu Glu Glu Gly Ser Gln			
220	225	230	
aag cga aaa cga gaa ccg gac gat gag ggc gaa gag gat gac taa	769		

Lys Arg Lys Arg Glu Pro Asp Asp Glu Gly Glu Glu Asp Asp
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<210> 688

<211> 247

<212> PRT

<213> Mus musculus

<400> 688

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 35 40 45
 Thr Ile Asn Val Gly Leu Thr Ser Ile Ser Asn Leu Pro Lys Leu Asn
 50 55 60
 Lys Leu Lys Lys Leu Glu Leu Ser Glu Asn Arg Ile Ser Gly Asp Leu
 65 70 75 80
 Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Lys His Leu Asn Leu Ser
 85 90 95
 Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys Leu
 100 105 110
 Glu Asn Leu Lys Ser Leu Asp Leu Phe Asn Cys Glu Val Thr Asn Leu
 115 120 125

Asn Ala Tyr Arg Glu Asn Val Phe Lys Leu Leu Pro Gln Val Met Tyr
 130 135 140
 Leu Asp Gly Tyr Asp Arg Asp Asn Lys Glu Ala Pro Asp Ser Asp Val
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 Glu Gly Tyr Val Glu Asp Asp Asp Glu Glu Asp Glu Asp Glu Glu Glu
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 Tyr Asp Glu Tyr Ala Gln Leu Val Glu Asp Glu Glu Glu Glu Val Glu
 180 185 190
 Glu Glu Glu Gly Glu Glu Glu Asp Val Ser Gly Glu Glu Glu Glu Asp
 195 200 205
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<210> 689

<211> 3273

<212> DNA

<213> Mus musculus

<400> 689

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<210> 690

<211> 901

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (121).. (651)

<400> 690

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atg act gtc act ctt gga gct cat aat gtg aga aag aga gaa tgc aca 168
Met Thr Val Thr Leu Gly Ala His Asn Val Arg Lys Arg Glu Cys Thr
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cag cag aag ata aaa gtt gaa aag tac atc ttg cct cca aat tac aat 216
Gln Gln Lys Ile Lys Val Glu Lys Tyr Ile Leu Pro Pro Asn Tyr Asn
      20              25              30
gtg tct tcc aag ttc aat gac atc gta tta ctg aag ctt gaa aag caa 264
Val Ser Ser Lys Phe Asn Asp Ile Val Leu Leu Lys Leu Glu Lys Gln
      35              40              45
gct aac ttg act tct gct gtg gat gta gtt ccc ctg cct gcc ccc tct 312
Ala Asn Leu Thr Ser Ala Val Asp Val Val Pro Leu Pro Ala Pro Ser
      50              55              60
gac ttt gcc aag cct ggg acg atg tgc tgg gca gct ggc tgg ggg cga 360
Asp Phe Ala Lys Pro Gly Thr Met Cys Trp Ala Ala Gly Trp Gly Arg
      65              70              75              80
act gga ttg aaa aaa agt atc tca cgt acc ctg aga gag gta gaa ctg 408
Thr Gly Leu Lys Lys Ser Ile Ser Arg Thr Leu Arg Glu Val Glu Leu
      85              90              95
aga atc atg ggg aaa aag gcc tgt aaa ata ttt aag cat tac aag gat 456
Arg Ile Met Gly Lys Lys Ala Cys Lys Ile Phe Lys His Tyr Lys Asp
      100              105              110
agc ctc cag atc tgt gtg ggc agt tcc aca aag gtg gca tca gta tac 504
Ser Leu Gln Ile Cys Val Gly Ser Ser Thr Lys Val Ala Ser Val Tyr
      115              120              125
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 165 170 175
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<210> 691

<211> 176

<212> PRT

<213> Mus musculus

<400> 691

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 20 25 30
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 35 40 45
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Asp Phe Ala Lys Pro Gly Thr Met Cys Trp Ala Ala Gly Trp Gly Arg
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 Thr Gly Leu Lys Lys Ser Ile Ser Arg Thr Leu Arg Glu Val Glu Leu
 85 90 95
 Arg Ile Met Gly Lys Lys Ala Cys Lys Ile Phe Lys His Tyr Lys Asp
 100 105 110
 Ser Leu Gln Ile Cys Val Gly Ser Ser Thr Lys Val Ala Ser Val Tyr
 115 120 125
 Met Gly Asp Ser Gly Gly Pro Leu Leu Cys Ala Gly Val Ala His Gly
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<210> 692

<211> 444

<212> DNA

<213> Mus musculus

<400> 692

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<210> 693

<211> 4042

<212> DNA

<213> Mus musculus

<400> 693

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<211> 430

<212> DNA

<213> Mus musculus

<400> 694

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<210> 695

<211> 223

<212> DNA

<213> Mus musculus

<400> 695

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<211> 477

<212> DNA

<213> Mus musculus

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<210> 697

<211> 587

<212> DNA

<213> Mus musculus

<400> 697

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ccgggaccgc gtctggcaga tccagtcctg ttacagcgctc acaggcgagg gcgtccagga 540
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<210> 698

<211> 7046

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (404).. (5641)

<400> 698

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 Met Ser Ala Arg
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 40 45 50
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 Ser Ile Val Ile Ser Asp Val Leu Lys Gly Gly Pro Ala Glu Gly Gln
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 Leu Gln Glu Asn Asp Arg Val Ala Met Val Asn Gly Val Ser Met Asp
 70 75 80
 aac gtt gaa cat gct ttt gct gtt cag cag cta agg aag agt ggg aaa 703
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 85 90 95 100
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 105 110 115

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 165 170 175 180
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 215 220 225
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 245 250 255 260
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265	270	275	
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280	285	290	
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310	315	320	
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345	350	355	
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Lys His Val Asp Asp His Pro Pro Lys Ala Val Glu Glu Val Thr Val			
360	365	370	
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375	380	385	
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Tyr Ala Gln Val Gly Gln Pro Asp Val Asp Leu Pro Val Ser Pro Ser			
390	395	400	
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Asp Gly Ala Leu Pro Asn Ser Ala His Glu Asp Gly Ile Leu Arg Pro			
405	410	415	420
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 485 490 495 500
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 Gln Lys Lys Lys Asp Val Tyr Arg Arg Ile Val Glu Ser Asp Val Gly
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 Leu Ala Arg Glu Glu Pro Asp Ile Tyr Gln Ile Ala Lys Ser Glu Leu
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 cga gac gct ggg act gac cat cgt agc tct ggc atc att cgc ctt cat 2479
 Arg Asp Ala Gly Thr Asp His Arg Ser Ser Gly Ile Ile Arg Leu His
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 Thr Ile Lys Gln Ile Ile Asp Gln Asp Lys His Ala Leu Leu Asp Val
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tcc tct gga atg cat cat gaa aac cag aca tac cct cct tac tca cca	3103
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Gln Ala Gln Pro Gln Ala Ile His Arg Ile Asp Ser Pro Gly Leu Lys	
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Pro Ala Ser Gln Gln Lys Ala Glu Ala Ser Ser Pro Val Pro Tyr Leu	
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Ser Pro Glu Thr Thr Pro Ala Ser Ser Ala Ser Ala Val Asn His Asn	
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Val Ser Val Thr Asn Val Ser Leu Glu Glu Pro Ala Pro Ala Pro Pro	
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Ala Ala His Val Gly Leu Arg Gly Glu Gly Pro Pro Leu Pro Pro His	
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Ala Asp Pro Ala Lys Val Tyr Arg Lys Glu Pro Tyr Ser Glu Glu Met	
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Gln Arg Pro Asp Lys Glu Pro Asn Leu Ala Tyr Glu Pro Gln Leu Pro	

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Tyr Tyr Asp Asp Lys Gln Pro Tyr Gln Pro Arg Pro Phe Glu Asn Gln			
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Ser Arg Thr Arg Tyr Glu Gln Leu Pro Arg Thr Ser Thr Leu Arg His			
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Lys Ala His Ser Ser Thr Gln Pro Pro Glu Phe Gly Ser Gly Val Glu			
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Thr Phe Ser Val His Thr Asp Lys Pro Lys Tyr Gln Met Asn Asn Ile			
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Asp Glu Asp Glu Asp Gly His Thr Val Val Ala Thr Ala Arg Gly Ile			
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Gly	Phe	Gly	Ile	Ala	Ile	Ser	Gly	Gly	Arg	Asp	Asn	Pro	His	Phe	Gln
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Ser	Gly	Glu	Thr	Ser	Ile	Val	Ile	Ser	Asp	Val	Leu	Lys	Gly	Gly	Pro
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Ala	Glu	Gly	Gln	Leu	Gln	Glu	Asn	Asp	Arg	Val	Ala	Met	Val	Asn	Gly
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															80

Val Ser Met Asp Asn Val Glu His Ala Phe Ala Val Gln Gln Leu Arg
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 Lys Ser Gly Lys Asn Ala Lys Ile Thr Ile Arg Arg Lys Lys Lys Val
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 Gln Ile Pro Val Ser His Pro Asp Pro Glu Pro Val Ser Asp Asn Glu
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 Asp Asp Ser Tyr Asp Glu Glu Val His Asp Pro Arg Ala Gly Arg Gly
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 Ala Leu Ala Asn Arg Arg Ser Glu Lys Ser Trp Ala Arg Asp Arg Ser
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 Ala Ser Arg Glu Arg Ser Leu Ser Pro Arg Ser Asp Arg Arg Ser Val
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 Ala Ser Ser Gln Pro Ala Lys Pro Thr Lys Val Thr Leu Val Lys Ser
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 Arg Lys Asn Glu Glu Tyr Gly Leu Arg Pro Ala Ser His Ile Phe Val
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 Glu Gly Asp Val Val Leu Lys Ile Asn Gly Thr Val Thr Glu Asn Met
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 Ser Leu Thr Asp Ala Lys Thr Leu Ile Glu Arg Ser Lys Gly Lys Leu
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 Lys Met Val Val Gln Arg Asp Glu Arg Ala Thr Leu Leu Asn Val Pro
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Ser Thr Pro Val Lys His Val Asp Asp His Pro Pro Lys Ala Val Glu			
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Glu Val Thr Val Glu Lys Asn Glu Lys Gln Thr Pro Thr Leu Pro Glu			
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Pro Lys Pro Val Tyr Ala Gln Val Gly Gln Pro Asp Val Asp Leu Pro			
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Val Ser Pro Ser Asp Gly Ala Leu Pro Asn Ser Ala His Glu Asp Gly			
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Ile Leu Arg Pro Ser Met Lys Leu Val Lys Phe Arg Lys Gly Asp Ser			
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Val Gly Leu Arg Leu Ala Gly Gly Asn Asp Val Gly Ile Phe Val Ala			
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Gly Val Leu Glu Asp Ser Pro Ala Ala Lys Glu Gly Leu Glu Glu Gly			
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Lys Glu Ser Pro Tyr Gly Leu Ser Phe Asn Lys Gly Glu Val Phe Arg			
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 Lys Asn Arg Ala Glu Gln Leu Ala Ser Val Gln Tyr Thr Leu Pro Lys
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Thr Gly Val Ser Ile Ile Ile Pro Gln Gly Ala Ile Pro Glu Gly Ile			
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1700

1705

1710

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1730

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Phe

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5

10

15

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 Lys Lys Arg Phe Leu Arg Lys Pro Asn Val Ala Glu Ala Gly Glu Gln
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 ttc gcc cag cta gcc cgg gag ctg cgc gcc cag gag tgc ctg cct tat 489
 Phe Ala Gln Leu Ala Arg Glu Leu Arg Ala Gln Glu Cys Leu Pro Tyr
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 gct gcc tgg tgc cag ctg gct gtg gcg cgc tgc cag cag gcg ctc ttc 537
 Ala Ala Trp Cys Gln Leu Ala Val Ala Arg Cys Gln Gln Ala Leu Phe
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 cat ggg ccc ggg gaa gcg ctg gcc ctc aca gag gcg gcc cga ctt ttc 585
 His Gly Pro Gly Glu Ala Leu Ala Leu Thr Glu Ala Ala Arg Leu Phe
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 ctg cgg cag gag tgc gac gcg cgc caa cgc ttg ggc tgt ccc gcc gcc 633
 Leu Arg Gln Glu Cys Asp Ala Arg Gln Arg Leu Gly Cys Pro Ala Ala
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 tac ggg gag cct ctg cag gcg gcc gcc agc ctc ggc gac gct gtg cgc 681
 Tyr Gly Glu Pro Leu Gln Ala Ala Ala Ser Leu Gly Asp Ala Val Arg
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 ttg cac ctc gag ctc ggc cag cct gcc gcc gct gct gca ctg tgc ctg 729
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 Glu Leu Ala Ala Ala Leu Arg Ala Val Gly Gln Pro Ala Ala Ala Ala
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Ala Ala Leu Gln Ala Leu Gly Asp Ala Ala Ser Cys Gln Leu Leu Ala			
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Arg Asp Tyr Thr Gly Ala Leu Ala Leu Phe Thr Arg Met Gln Arg Leu			
195	200	205	
gca cgg gag cat ggg ggc cac ccg gta cag caa ctc gag ctg ctg ccg	969		
Ala Arg Glu His Gly Gly His Pro Val Gln Gln Leu Glu Leu Leu Pro			
210	215	220	225
cag ccg cct tct ggg ccc cag cca ccc ctg tgc gga ccc cag ccg aga	1017		
Gln Pro Pro Ser Gly Pro Gln Pro Pro Leu Ser Gly Pro Gln Pro Arg			
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Pro Val Leu Gly Ser Thr Leu Pro Leu Pro Gln Pro Pro Asp His Ala			
245	250	255	
cca ggc tct gtt gcg cct tca cct ggc aca ctc ggt gcc ttt gct gac	1113		
Pro Gly Ser Val Ala Pro Ser Pro Gly Thr Leu Gly Ala Phe Ala Asp			
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Val Leu Val Arg Cys Glu Val Ser Arg Val Leu Leu Leu Leu Leu Leu			
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caa cca cca cct gcc aag ctg ctg ccc gag cat gcc cag acc ctg gag	1209		
Gln Pro Pro Pro Ala Lys Leu Leu Pro Glu His Ala Gln Thr Leu Glu			
290	295	300	305
aag tac tcc tgg gag gct ttc gat ggc cat ggc cag gat acc agc ggc	1257		
Lys Tyr Ser Trp Glu Ala Phe Asp Gly His Gly Gln Asp Thr Ser Gly			
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Gln Leu Pro Glu Glu Leu Phe Leu Leu Leu Gln Ser Leu Val Met Ala
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 gcc caa gaa aag gac act gaa ggc atc aag aag ctg cag gtg gag atg 1353
 Ala Gln Glu Lys Asp Thr Glu Gly Ile Lys Lys Leu Gln Val Glu Met
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 tgg cca ctg cta acc gct gag cag aac cac ctc ctc cac ctc gtt ctg 1401
 Trp Pro Leu Leu Thr Ala Glu Gln Asn His Leu Leu His Leu Val Leu
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 cag gaa acc atc tct ccc tct gga cag ggt gtc tga taagtcacct 1447
 Gln Glu Thr Ile Ser Pro Ser Gly Gln Gly Val
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<211> 380

<212> PRT

<213> Mus musculus

<400> 701

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Gln Phe Ala Gln Leu Ala Arg Glu Leu Arg Ala Gln Glu Cys Leu Pro		
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Tyr Ala Ala Trp Cys Gln Leu Ala Val Ala Arg Cys Gln Gln Ala Leu		
65	70	75
Phe His Gly Pro Gly Glu Ala Leu Ala Leu Thr Glu Ala Ala Arg Leu		
85	90	95
Phe Leu Arg Gln Glu Cys Asp Ala Arg Gln Arg Leu Gly Cys Pro Ala		
100	105	110
Ala Tyr Gly Glu Pro Leu Gln Ala Ala Ala Ser Leu Gly Asp Ala Val		
115	120	125
Arg Leu His Leu Glu Leu Gly Gln Pro Ala Ala Ala Ala Ala Leu Cys		
130	135	140
Leu Glu Leu Ala Ala Ala Leu Arg Ala Val Gly Gln Pro Ala Ala Ala		
145	150	155
Ala Gly His Phe Gln Arg Ala Ala Gln Arg His Leu Pro Leu Met Pro		
165	170	175
Leu Ala Ala Leu Gln Ala Leu Gly Asp Ala Ala Ser Cys Gln Leu Leu		
180	185	190
Ala Arg Asp Tyr Thr Gly Ala Leu Ala Leu Phe Thr Arg Met Gln Arg		
195	200	205
Leu Ala Arg Glu His Gly Gly His Pro Val Gln Gln Leu Glu Leu Leu		
210	215	220
Pro Gln Pro Pro Ser Gly Pro Gln Pro Pro Leu Ser Gly Pro Gln Pro		
225	230	235
Arg Pro Val Leu Gly Ser Thr Leu Pro Leu Pro Gln Pro Pro Asp His		
245	250	255
Ala Pro Gly Ser Val Ala Pro Ser Pro Gly Thr Leu Gly Ala Phe Ala		
260	265	270

1707/2644

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Leu Val Cys Leu Leu Met Ser Arg Ser Ile Ala Lys Glu Val Ser Glu			
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cac tgt agc cac atg att ggg aat gga cac ctg aag gtc ctg cag cag	318		
His Cys Ser His Met Ile Gly Asn Gly His Leu Lys Val Leu Gln Gln			
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Leu Ile Asp Ser Gln Met Glu Thr Ser Cys Gln Ile Ala Phe Glu Phe			
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gta gac cag gaa cag ctg gat gat cct gtt tgc tac cta aag aag gcc	414		
Val Asp Gln Glu Gln Leu Asp Asp Pro Val Cys Tyr Leu Lys Lys Ala			
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Phe Phe Leu Val Gln Asp Ile Ile Asp Glu Thr Met Arg Phe Lys Asp			
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aac acc ccc aat gct aac gcc acc gag agg ctc cag gaa ctc tcc aat	510		
Asn Thr Pro Asn Ala Asn Ala Thr Glu Arg Leu Gln Glu Leu Ser Asn			
105	110	115	
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Asn Leu Asn Ser Cys Phe Thr Lys Asp Tyr Glu Glu Gln Asn Lys Ala			
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tgt gtc cga act ttc cat gag act cct ctc cag ctg ctg gag aag atc	606		
Cys Val Arg Thr Phe His Glu Thr Pro Leu Gln Leu Leu Glu Lys Ile			
135	140	145	
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Lys Asn Phe Phe Asn Glu Thr Lys Asn Leu Leu Glu Lys Asp Trp Asn
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 Ile Phe Thr Lys Asn Cys Asn Asn Ser Phe Ala Lys Cys Ser Ser Arg
 170 175 180
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 Asp Val Val Thr Lys Pro Asp Cys Asn Cys Leu Tyr Pro Lys Ala Thr
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 cct agc agt gac ccg gcc tct gcc tcc cct cac cag ccc ccc gcc ccc 798
 Pro Ser Ser Asp Pro Ala Ser Ala Ser Pro His Gln Pro Pro Ala Pro
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 Ser Met Ala Pro Leu Ala Gly Leu Ala Trp Asp Asp Ser Gln Arg Thr
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 Glu Gly Ser Ser Leu Leu Pro Ser Glu Leu Pro Leu Arg Ile Glu Asp
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 cca ggc agt gcc aag cag cga cca ccc agg agt acc tgc cag acc ctc 942
 Pro Gly Ser Ala Lys Gln Arg Pro Pro Arg Ser Thr Cys Gln Thr Leu
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 Glu Ser Thr Glu Gln Pro Asn His Gly Asp Arg Leu Thr Glu Asp Ser
 265 270 275
 caa cct cat cct tct gcg ggg ggg ccc gtc cct ggg gtg gaa gac att 1038
 Gln Pro His Pro Ser Ala Gly Gly Pro Val Pro Gly Val Glu Asp Ile
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 ctt gaa tct tca ctg ggc act aac tgg gtc cta gaa gaa gct tct gga 1086
 Leu Glu Ser Ser Leu Gly Thr Asn Trp Val Leu Glu Glu Ala Ser Gly
 295 300 305

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 Thr Pro Val Gly Gly Ser Ile Gln Ala Glu Thr Asp Arg Pro Arg Ala
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 Leu Ser Ala Ser Pro Phe Pro Lys Ser Thr Glu Asp Gln Lys Pro Val
 345 350 355
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 Asp Ile Thr Asp Arg Pro Leu Thr Glu Val Asn Pro Met Arg Pro Ile
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 375 380 385
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 Leu Arg Glu Asp His Gln Glu Pro Gly Ser Pro His Ile Ala Thr Pro
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<211> 552

<212> PRT

<213> Mus musculus

<400> 703

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 Lys Val Leu Gln Gln Leu Ile Asp Ser Gln Met Glu Thr Ser Cys Gln
 50 55 60
 Ile Ala Phe Glu Phe Val Asp Gln Glu Gln Leu Asp Asp Pro Val Cys
 65 70 75 80
 Tyr Leu Lys Lys Ala Phe Phe Leu Val Gln Asp Ile Ile Asp Glu Thr
 85 90 95
 Met Arg Phe Lys Asp Asn Thr Pro Asn Ala Asn Ala Thr Glu Arg Leu
 100 105 110
 Gln Glu Leu Ser Asn Asn Leu Asn Ser Cys Phe Thr Lys Asp Tyr Glu
 115 120 125
 Glu Gln Asn Lys Ala Cys Val Arg Thr Phe His Glu Thr Pro Leu Gln
 130 135 140
 Leu Leu Glu Lys Ile Lys Asn Phe Phe Asn Glu Thr Lys Asn Leu Leu
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 180 185 190
 Tyr Pro Lys Ala Thr Pro Ser Ser Asp Pro Ala Ser Ala Ser Pro His
 195 200 205

Gln Pro Pro Ala Pro Ser Met Ala Pro Leu Ala Gly Leu Ala Trp Asp
 210 215 220
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 225 230 235 240
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 245 250 255
 Thr Cys Gln Thr Leu Glu Ser Thr Glu Gln Pro Asn His Gly Asp Arg
 260 265 270
 Leu Thr Glu Asp Ser Gln Pro His Pro Ser Ala Gly Gly Pro Val Pro
 275 280 285
 Gly Val Glu Asp Ile Leu Glu Ser Ser Leu Gly Thr Asn Trp Val Leu
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 Glu Glu Ala Ser Gly Glu Ala Ser Glu Gly Phe Leu Thr Gln Glu Ala
 305 310 315 320
 Lys Phe Ser Pro Ser Thr Pro Val Gly Gly Ser Ile Gln Ala Glu Thr
 325 330 335
 Asp Arg Pro Arg Ala Leu Ser Ala Ser Pro Phe Pro Lys Ser Thr Glu
 340 345 350
 Asp Gln Lys Pro Val Asp Ile Thr Asp Arg Pro Leu Thr Glu Val Asn
 355 360 365
 Pro Met Arg Pro Ile Gly Gln Thr Gln Asn Asn Thr Pro Glu Lys Thr
 370 375 380
 Asp Gly Thr Ser Thr Leu Arg Glu Asp His Gln Glu Pro Gly Ser Pro
 385 390 395 400
 His Ile Ala Thr Pro Asn Pro Gln Arg Val Ser Asn Ser Ala Thr Pro
 405 410 415
 Val Ala Gln Leu Leu Leu Pro Lys Ser His Ser Trp Gly Ile Val Leu
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 Pro Leu Gly Glu Leu Glu Gly Lys Arg Ser Thr Arg Asp Arg Arg Ser

435 440 445
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 Val Ala Arg Phe Asn Ser Ile Pro Leu Thr Asp Thr Gly His Val Glu
 465 470 475 480
 Gln His Glu Gly Ser Ser Asp Pro Gln Ile Pro Glu Ser Val Phe His
 485 490 495
 Leu Leu Val Pro Gly Ile Ile Leu Val Leu Leu Thr Val Gly Gly Leu
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 Leu Phe Tyr Lys Trp Lys Trp Arg Ser His Arg Asp Pro Gln Thr Leu
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<210> 704

<211> 408

<212> DNA

<213> Mus musculus

<400> 704

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<210> 705

<211> 563

<212> DNA

<213> *Mus musculus*

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gtccgagaag caaaagctcc gcgctcaggt tcgacggctg tgcaggagaa ccagtggctg 480
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ggaaggagga gaagaacacc tgg                                     563
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<210> 706

<211> 488

<212> DNA

<213> *Mus musculus*

<400> 706

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<210> 707

<211> 1067

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (84).. (866)

<400> 707

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Met Ala Lys Glu Trp Gly Tyr Ala Arg His

1 5 10

aat ggt cct gat cac tgg cat gaa ctt tat cca att gcc aaa ggg gac 161

Asn Gly Pro Asp His Trp His Glu Leu Tyr Pro Ile Ala Lys Gly Asp

15 20 25

aac cag tca ccc att gaa ctg cat act aaa gac atc aag cat gac ccc 209

Asn Gln Ser Pro Ile Glu Leu His Thr Lys Asp Ile Lys His Asp Pro

30 35 40

tct ctg cag ccc tgg tca gca tct tat gac cct ggc tct gct aag acc 257

Ser Leu Gln Pro Trp Ser Ala Ser Tyr Asp Pro Gly Ser Ala Lys Thr

45 50 55

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Ile Leu Asn Asn Gly Lys Thr Cys Arg Val Val Phe Asp Asp Thr Tyr
 60 65 70
 gac agg tct atg ctg agg ggt ggt cct ctc tct cgg ccc tac cga ctt 353
 Asp Arg Ser Met Leu Arg Gly Gly Pro Leu Ser Arg Pro Tyr Arg Leu
 75 80 85 90
 cgc caa ttc cat ctt cac tgg ggc tcc tct gat gac cac ggc tct gag 401
 Arg Gln Phe His Leu His Trp Gly Ser Ser Asp Asp His Gly Ser Glu
 95 100 105
 cac acc gtg gac gga gta aaa tac gct gct gag ctt cac ctg gtt cac 449
 His Thr Val Asp Gly Val Lys Tyr Ala Ala Glu Leu His Leu Val His
 110 115 120
 tgg aat cca agg tat aac acc ttt gga gag gct ctg aag cag cct gat 497
 Trp Asn Pro Arg Tyr Asn Thr Phe Gly Glu Ala Leu Lys Gln Pro Asp
 125 130 135
 ggc atc gct gtg gtt ggc att ttg ctg aag ata gga cgg gag aaa ggc 545
 Gly Ile Ala Val Val Gly Ile Leu Leu Lys Ile Gly Arg Glu Lys Gly
 140 145 150
 gag ttc cag att ctt ctt gat gcc ttg gac aaa att aag acg aag ggc 593
 Glu Phe Gln Ile Leu Leu Asp Ala Leu Asp Lys Ile Lys Thr Lys Gly
 155 160 165 170
 aag gag gcc cct ttt aca cac ttt gac cca tca tgc ctg ttc cct gct 641
 Lys Glu Ala Pro Phe Thr His Phe Asp Pro Ser Cys Leu Phe Pro Ala
 175 180 185
 tgc cgg gac tat tgg acc tat cac ggc tcc ttc acc acg ccg ccc tgc 689
 Cys Arg Asp Tyr Trp Thr Tyr His Gly Ser Phe Thr Thr Pro Pro Cys
 190 195 200
 gag gag tgc att gtg tgg ctg ctg ctc aaa gag ccc atg act gtg agc 737
 Glu Glu Cys Ile Val Trp Leu Leu Leu Lys Glu Pro Met Thr Val Ser
 205 210 215

tca gac cag atg gcc aag ctg cgc agc ctc ttc tcc agc gca gag aat 785
 Ser Asp Gln Met Ala Lys Leu Arg Ser Leu Phe Ser Ser Ala Glu Asn
 220 225 230
 gag ccc ccg gtg cct ctg gtg ggg aat tgg cgc cct cct cag cct gtc 833
 Glu Pro Pro Val Pro Leu Val Gly Asn Trp Arg Pro Pro Gln Pro Val
 235 240 245 250
 aag ggc agg gtg gtg agg gcc tcc ttc aag taa ggctctgagc ttgccctctt 886
 Lys Gly Arg Val Val Arg Ala Ser Phe Lys
 255 260
 cgggcaagaa actctgcccc tgaagagcct gcttgtctcc tcctgtgctc cctactccaa 946
 gcigtccgac gaacacctag ggaagaggag aagcagtcac atgcaaccgc agtgcctttt 1006
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<210> 708

<211> 260

<212> PRT

<213> Mus musculus

<400> 708

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 20 25 30
 Leu His Thr Lys Asp Ile Lys His Asp Pro Ser Leu Gln Pro Trp Ser
 35 40 45
 Ala Ser Tyr Asp Pro Gly Ser Ala Lys Thr Ile Leu Asn Asn Gly Lys
 50 55 60
 Thr Cys Arg Val Val Phe Asp Asp Thr Tyr Asp Arg Ser Met Leu Arg

65 70 75 80
 Gly Gly Pro Leu Ser Arg Pro Tyr Arg Leu Arg Gln Phe His Leu His
 85 90 95
 Trp Gly Ser Ser Asp Asp His Gly Ser Glu His Thr Val Asp Gly Val
 100 105 110
 Lys Tyr Ala Ala Glu Leu His Leu Val His Trp Asn Pro Arg Tyr Asn
 115 120 125
 Thr Phe Gly Glu Ala Leu Lys Gln Pro Asp Gly Ile Ala Val Val Gly
 130 135 140
 Ile Leu Leu Lys Ile Gly Arg Glu Lys Gly Glu Phe Gln Ile Leu Leu
 145 150 155 160
 Asp Ala Leu Asp Lys Ile Lys Thr Lys Gly Lys Glu Ala Pro Phe Thr
 165 170 175
 His Phe Asp Pro Ser Cys Leu Phe Pro Ala Cys Arg Asp Tyr Trp Thr
 180 185 190
 Tyr His Gly Ser Phe Thr Thr Pro Pro Cys Glu Glu Cys Ile Val Trp
 195 200 205
 Leu Leu Leu Lys Glu Pro Met Thr Val Ser Ser Asp Gln Met Ala Lys
 210 215 220
 Leu Arg Ser Leu Phe Ser Ser Ala Glu Asn Glu Pro Pro Val Pro Leu
 225 230 235 240
 Val Gly Asn Trp Arg Pro Pro Gln Pro Val Lys Gly Arg Val Val Arg
 245 250 255
 Ala Ser Phe Lys
 260

<210> 709

<211> 634

<212> DNA

<213> Mus musculus

<400> 709

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agtatttcaa atctcataga tgacttccaa gtattgtcgt ttgacactca gctgtictaag 180
gtattcaaag gtattccagt actacagctt ttgagattct agtttatctt aaagggtgga 240
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atgtagccga ggctaggcag aaacttctga cctcttgac cccacctccc aagtgtgagg 360
cttcaccagg tgtgcacctc cacacctgcc cccccgacat gtcagggtga catgggattc 420
atgaatggcc citagcatit ctttctccac tctctgcttc ccaggtttcg taacctgagg 480
gggcttggtt ccttatgtg catttttaa gaagatcaag aatctttgta aaatgatgaa 540
aatttactat gtaaatgcit gatggatctt ctgctagtg tagcttctag aagggtgctt 600
ctccatttat ttagactacc ctgcaatta gaaa 634

<210> 710

<211> 975

<212> DNA

<213> Mus musculus

<400> 710

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tcggatggcg tcttcaagta tgtgctgatt cgagtcact tagcagagcc ttctggggat 180
ccggcgaagg agtgcaagga aatcgtgcgt ggctacaaat gggctgagta ccacgcggac 240
atctatgaca aagtgtcagg cgagctgcaa aggaatggct atgactgtga gtgcctaggc 300
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tgaggtcacg tgggctgacg aggcatttag agtctgccc accggcacgc ccggaattaa 480

tcaggctctg ccgtgctggg ttagttttaaa ggggtgcctg tggliccttt tgtacttgga 540
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aaaagagaga tgggcggagt tgccttttgg gggllatigg ttggagcggg tttaaagggt 660
gggacagggg tcccagtagg gggggccct tgtgcggtag agagaagccg gagatgctca 720
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gtgtttttgt gttgcgtggg ggggcggacg gaagaggatg gaggggttgc gaaatactag 840
tgggcagatt ttgggtgtt tgggataaga gagtttttgt ggaggagaga aaaatgaggc 900
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<210> 711

<211> 1061

<212> DNA

<213> Mus musculus

<400> 711

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ggaacaggct caagtacgcc ctgaccggcg acgaggtgaa gaagatctgc atgcagcggc 180
tcattaaggt cgacggcaag gtcagaaccg atgtggccta ccagctggc ttcatggatg 240
tcatcagcat cgacaagagc ggcgagaact tccgcctcgt ctacgacacc aagggccgct 300
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ctgaccgct catcaaggtc aacgacaccg tgcagatctc gctagacagc ggaggaatca 480
ccgatgcgat caagtttgat accggcaact gttcatcgta cctgagcgcg aactcgggtg 540
atcgcgatcat acaaccgcag cgcaccgggt ccttgaagtg tcacttaaag atgcacgaat 600
tgctgggtacg gctcctaaat ttgatggag gcaaagcgtg gtcctccggg aaagactcgc 660
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ttgggagggc cctgigagct ggcggtgcag ctcttggtgt cagtgttata gacgcngnng 840
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 cgcggggggg gcggccgggg gggggggggc gggcgggggg gggcgtggcg tgcgggtcgg 1020
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<210> 712

<211> 456

<212> DNA

<213> Mus musculus

<400> 712

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 aacgtgctga ggctgnnnnn nttgggtggac aaactacaga ctaaagtgaag agcctacaag 180
 agacaggctg aggaggctga ggaacaatcc aatgtcaacn nnnnnaagtt ccgtaagatc 240
 cagcacgagc tggaggaagc cgaggagcgg gctgacatcg cgnnnnnnnn ngtaacaag 300
 ctgcgggtga agagccgaga gggtcacact aaagtcataa gcgaagaata atccatctti 360
 ctgttgagag gtgacaggag aaatcacaaa atgtgacgtt ctttgtcact gtccgtgtata 420
 tcacggaaat aaattctgca gataattttg caatct 456

<210> 713

<211> 533

<212> DNA

<213> Mus musculus

<400> 713

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ctggctctccc tcgcgcctcc tgcctcact ctgcatitaa agcgattcca gcaggctggg 180
 ttttaacctgc gcaaagttaa caaacacata aagtttccag aaatctttaga tttggctcct 240
 ttttgtaccc ttaaagttaa gaatgttgct gaagaaagia cacgagtgct gtattcctta 300
 tatggagttg ttgaacacag tggactatg aggtcagggc attacactgc ctatgcgaag 360
 gagagaactg caagctgtca cctctccaat ctgtttcttc acggtgacat tccacaagat 420
 tgtgaaatgg aatcaaccaa agggcagtggt ttacacatca gcgatacaca tgtgcaagct 480
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<210> 714

<211> 1077

<212> DNA

<213> Mus musculus

<400> 714

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 acatcccaga ttgctgaagc taaaagagat gttaaactct aaatttgggt ccacacccaa 180
 gttttatgtt cgagccccag gaagagtcaa cataataggt gagcacatag attactgttg 240
 atattccgtt attcccatgg ctgtggaaca agacatgta atagctgttg aaccigtgaa 300
 aacacacact ctccaactgg ctaatacaga ccccttgtat ccagactica gtactacagc 360
 taataacatc tgtatcgaca agaccaaacc tctatggcac aactacttct tgtgtggcct 420
 taagggaatt caggaacact ttggccttag taagctgcct ggaatgaatt gcctggtaga 480
 tggaaatata cccccgagt cgggccgtgt ccagntccag tgctctgggt tgcgtcctg 540
 ggtagtgaa cncacggtc ntggagttag agttcgtaag tggactigca gaatctgtgc 600
 cagagtacnc gtcatagccn tgaagtaggg catgaccagc catactatcg ttcgagagan 660
 gactcccagt agtagagtig cgtentagan gactatggta cgiccagtg gagctnigtg 720
 atcgacagtc attgaatana gaggcaccgg tctctctat tatgtggggg ggtggctgtg 780
 cggggaggtc gtgtgtcaac aaacagagag aagggtagt cggaagtig tccctctcgt 840
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ttcttgcgca tggcgcgga tagttcacca ccactgngac caaccgggta cctgtcgtct 960
gtgaaagaga taacgcctct tcttatgta tcacggagcg acggctctct ctctccacgc 1020
tagggnnnnn nnnnnnnnnn nnnngngngn nnnngngngn gnnngnnngng ngggng 1077

<210> 715

<211> 402

<212> DNA

<213> Mus musculus

<400> 715

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tgcagcgaaa cctcctgcac gagaggctct ggagagatgt ggtgatgggg cgttcttgct 180
aacaacaaca cctcgtccag tcattgtaga accctggagc agtttgatga tgaagatggt 240
ttacagagaa gctaattcag aaaactcaac agtaccataa ggaaagagga acagccacca 300
cgggttigct caagcctggg acatttgaa ttggaatatg cgtctcgatg gaaggctctt 360
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<210> 716

<211> 5841

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (96).. (3593)

<400> 716

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tatttaataacc attccctgtc tctcctccca gcagc atg tca tgg ttt agt ggc	113
Met Ser Trp Phe Ser Gly	
1 5	
ctc ctg gtt ccc aaa gtg gat gaa cgg aaa aca gct tgg ggg gaa cgc	161
Leu Leu Val Pro Lys Val Asp Glu Arg Lys Thr Ala Trp Gly Glu Arg	
10 15 20	
aat ggg cag aag cgc cca cgc cac gcg aat cga gcc agt ggc ttc tgc	209
Asn Gly Gln Lys Arg Pro Arg His Ala Asn Arg Ala Ser Gly Phe Cys	
25 30 35	
gca cct cgc tac atg agc tgc ctc aag aat gcg gag cca ccc agc ccc	257
Ala Pro Arg Tyr Met Ser Cys Leu Lys Asn Ala Glu Pro Pro Ser Pro	
40 45 50	
act cct gca gct cac act cgg tgc ccc tgg cag gat gaa gcc ttc atc	305
Thr Pro Ala Ala His Thr Arg Cys Pro Trp Gln Asp Glu Ala Phe Ile	
55 60 65 70	
agg agg gcg ggc ccg ggc agg ggt gtg gag ctg ggg ctg cgg tca gtg	353
Arg Arg Ala Gly Pro Gly Arg Gly Val Glu Leu Gly Leu Arg Ser Val	
75 80 85	
gcc ttg ggg ttt gac gac act gag gtg acc aca ccg atg ggc aca gct	401
Ala Leu Gly Phe Asp Asp Thr Glu Val Thr Thr Pro Met Gly Thr Ala	
90 95 100	
gaa gtg gca ccg gat aca tcg cct cgg agc ggt ccg tcc tgc tgg cac	449
Glu Val Ala Pro Asp Thr Ser Pro Arg Ser Gly Pro Ser Cys Trp His	
105 110 115	
cgg ctt gtg cag gtg ttc cag tct aag cag ttc cgc tct gcc aag ctg	497
Arg Leu Val Gln Val Phe Gln Ser Lys Gln Phe Arg Ser Ala Lys Leu	
120 125 130	
gag cgg ctg tac cag cgg tac ttc ttc cag atg aac cag agc agc ctc	545
Glu Arg Leu Tyr Gln Arg Tyr Phe Phe Gln Met Asn Gln Ser Ser Leu	

135	140	145	150	
acg ctg ctc atg gcg gtg ctg gtg ctg ctc atg gct gta ctg ttg act	593			
Thr Leu Leu Met Ala Val Leu Val Leu Leu Met Ala Val Leu Leu Thr				
	155	160	165	
ttc cac gct gcg cct gcc cag cct cag cct gct tac gtg gcc ctg ctg	641			
Phe His Ala Ala Pro Ala Gln Pro Gln Pro Ala Tyr Val Ala Leu Leu				
	170	175	180	
acc tgt gcc tct gtc ctt ttt gtg gta ctc atg gtg gtg tgt aac cga	689			
Thr Cys Ala Ser Val Leu Phe Val Val Leu Met Val Val Cys Asn Arg				
	185	190	195	
cac agc ttc cgc cag gac tcc atg tgg gtg gtg agc tat gtg gtc ctg	737			
His Ser Phe Arg Gln Asp Ser Met Trp Val Val Ser Tyr Val Val Leu				
	200	205	210	
ggc atc cta gca gcc gtg caa gtc ggg ggt gcc ctg gca gcc aat cca	785			
Gly Ile Leu Ala Ala Val Gln Val Gly Gly Ala Leu Ala Ala Asn Pro				
	215	220	225	230
cac agc ccc tcg gcg ggc ctt tgg tgc ccc gtg ttc ttc gtc tac atc	833			
His Ser Pro Ser Ala Gly Leu Trp Cys Pro Val Phe Phe Val Tyr Ile				
	235	240	245	
acc tac act ctt ctt ccc att cgc atg cga gcc gca gta ctc agc ggc	881			
Thr Tyr Thr Leu Leu Pro Ile Arg Met Arg Ala Ala Val Leu Ser Gly				
	250	255	260	
ctg ggc ctc tct act ctg cat ttg att ttg gcc tgg cag ctc aac agc	929			
Leu Gly Leu Ser Thr Leu His Leu Ile Leu Ala Trp Gln Leu Asn Ser				
	265	270	275	
agc gac ccc ttc ctt tgg aag cag ctc ggt gct aac gtg gtg ctc ttc	977			
Ser Asp Pro Phe Leu Trp Lys Gln Leu Gly Ala Asn Val Val Leu Phe				
	280	285	290	
ctc tgc acc aat gcc atc ggt gtc tgc aca cac tac cct gct gaa gtg	1025			

Leu Cys Thr Asn Ala Ile Gly Val Cys Thr His Tyr Pro Ala Glu Val
 295 300 305 310
 tct cag cgc caa gct ttt cag gag acc cga ggt tac atc cag gcg cgg 1073
 Ser Gln Arg Gln Ala Phe Gln Glu Thr Arg Gly Tyr Ile Gln Ala Arg
 315 320 325
 ctg cac ctg cag cat gag aac cgt cag cag gaa cgg ctg ctg cta tcg 1121
 Leu His Leu Gln His Glu Asn Arg Gln Gln Glu Arg Leu Leu Leu Ser
 330 335 340
 gtg ttg ccc cag cac gtt gcc atg gag atg aaa gaa gac atc aac aca 1169
 Val Leu Pro Gln His Val Ala Met Glu Met Lys Glu Asp Ile Asn Thr
 345 350 355
 aaa aaa gag gac atg atg ttc cat aag atc tac atc cag aag cat gat 1217
 Lys Lys Glu Asp Met Met Phe His Lys Ile Tyr Ile Gln Lys His Asp
 360 365 370
 aat gtc agc atc ctg ttt gcg gac att gag ggc ttc acc agc ctg gcc 1265
 Asn Val Ser Ile Leu Phe Ala Asp Ile Glu Gly Phe Thr Ser Leu Ala
 375 380 385 390
 tcc cag tgc act gca cag gaa ctg gtc atg acc ttg aat gag ctc ttt 1313
 Ser Gln Cys Thr Ala Gln Glu Leu Val Met Thr Leu Asn Glu Leu Phe
 395 400 405
 gcc cgg ttt gac aag ctg gct gcg gag aat cac tgt ctg agg atc aag 1361
 Ala Arg Phe Asp Lys Leu Ala Ala Glu Asn His Cys Leu Arg Ile Lys
 410 415 420
 atc tta gga gac tgt tac tac tgc gtg tca ggg ctg ccc gag gcc cgg 1409
 Ile Leu Gly Asp Cys Tyr Tyr Cys Val Ser Gly Leu Pro Glu Ala Arg
 425 430 435
 gca gat cac gcc cac tgc tgt gtg gag atg ggg gta gac atg atc gaa 1457
 Ala Asp His Ala His Cys Cys Val Glu Met Gly Val Asp Met Ile Glu
 440 445 450

gcc atc tcg ctg gtg cgt gag gta aca ggt gig aac gtg aac atg cgt 1505
 Ala Ile Ser Leu Val Arg Glu Val Thr Gly Val Asn Val Asn Met Arg
 455 460 465 470
 gtg ggc atc cac agc gga cgt gtg cat tgc ggc gtc ctt ggc cta cgg 1553
 Val Gly Ile His Ser Gly Arg Val His Cys Gly Val Leu Gly Leu Arg
 475 480 485
 aaa tgg cag ttt gat gtc tgg tca aac gat gtg acc ctg gct aac cac 1601
 Lys Trp Gln Phe Asp Val Trp Ser Asn Asp Val Thr Leu Ala Asn His
 490 495 500
 atg gag gcc ggg ggc ggc cgg cgc atc cac atc act cgg gct aca ctg 1649
 Met Glu Ala Gly Gly Gly Arg Arg Ile His Ile Thr Arg Ala Thr Leu
 505 510 515
 cag tac ttg aac ggg gac tat gag gtg gag cca ggc cgt ggt ggt gaa 1697
 Gln Tyr Leu Asn Gly Asp Tyr Glu Val Glu Pro Gly Arg Gly Gly Glu
 520 525 530
 cgc aat gcg tac ctc aag gag cag tgc att gag acc ttc ctc ata ctt 1745
 Arg Asn Ala Tyr Leu Lys Glu Gln Cys Ile Glu Thr Phe Leu Ile Leu
 535 540 545 550
 ggc gcc agc caa aaa cgg aaa gag gag aaa gcc atg ctg gcc aag ctt 1793
 Gly Ala Ser Gln Lys Arg Lys Glu Glu Lys Ala Met Leu Ala Lys Leu
 555 560 565
 cag cgg aca cgg gcc aac tcc atg gaa gga ctg atg ccc cgc tgg gtt 1841
 Gln Arg Thr Arg Ala Asn Ser Met Glu Gly Leu Met Pro Arg Trp Val
 570 575 580
 cct gac cgt gcc ttc tcc cgg acc aag gac tct aag gca ttc cgc cag 1889
 Pro Asp Arg Ala Phe Ser Arg Thr Lys Asp Ser Lys Ala Phe Arg Gln
 585 590 595
 atg ggc att gat gat tct agc aaa gac aac cgg ggt gcc caa gat gct 1937
 Met Gly Ile Asp Asp Ser Ser Lys Asp Asn Arg Gly Ala Gln Asp Ala

600	605	610	
ctg aac cct gaa gat gag gtg gat gag ttc ctg ggc cga gcc atc gat			1985
Leu Asn Pro Glu Asp Glu Val Asp Glu Phe Leu Gly Arg Ala Ile Asp			
615	620	625	630
gcc cga agc atc gac caa ctg cgt aag gac cat gtg cgc cgg ttc ctg			2033
Ala Arg Ser Ile Asp Gln Leu Arg Lys Asp His Val Arg Arg Phe Leu			
635	640	645	
ctc acc ttc cag aga gag gat ctt gag aag aag tat tca cgg aaa gta			2081
Leu Thr Phe Gln Arg Glu Asp Leu Glu Lys Lys Tyr Ser Arg Lys Val			
650	655	660	
gat cct cgc ttc gga gcc tac gtc gcc tgt gcc ctc ctg gtt ttt tgc			2129
Asp Pro Arg Phe Gly Ala Tyr Val Ala Cys Ala Leu Leu Val Phe Cys			
665	670	675	
ttc atc tgt ttt atc cag ctc ctt gtg ttc cca tac tcc acc ctg ata			2177
Phe Ile Cys Phe Ile Gln Leu Leu Val Phe Pro Tyr Ser Thr Leu Ile			
680	685	690	
ctc ggg att tat gcc gct atc ttc ctg ctg ttg ctg gtc act gtg ctg			2225
Leu Gly Ile Tyr Ala Ala Ile Phe Leu Leu Leu Leu Val Thr Val Leu			
695	700	705	710
atc tgt gcc gtg tgc tcc tgc ggt tct ttc ttc ccc aag gcc ctg caa			2273
Ile Cys Ala Val Cys Ser Cys Gly Ser Phe Phe Pro Lys Ala Leu Gln			
715	720	725	
cgc ctg tcc cgc aat att gtc cgc tca cgg gtg cac agc acc gcg gtt			2321
Arg Leu Ser Arg Asn Ile Val Arg Ser Arg Val His Ser Thr Ala Val			
730	735	740	
gga atc ttc tcg gtt ctg ctt gtg ttc atc tct gcc atc gcc aac atg			2369
Gly Ile Phe Ser Val Leu Leu Val Phe Ile Ser Ala Ile Ala Asn Met			
745	750	755	
ttt acc tgt aat cac acc cca ata agg acc tgc gcg gcc cgg atg ctg			2417

Phe Thr Cys Asn His Thr Pro Ile Arg Thr Cys Ala Ala Arg Met Leu	
760	765
aac tta aca cca gcg gat gtc acc gcc tgc cac cta caa cag ctc aat	2465
Asn Leu Thr Pro Ala Asp Val Thr Ala Cys His Leu Gln Gln Leu Asn	
775	780
tac tct ctg gga ctg gat gct ccc ctg tgt gag ggc acc gca ccc acc	2513
Tyr Ser Leu Gly Leu Asp Ala Pro Leu Cys Glu Gly Thr Ala Pro Thr	
795	800
tgc agc ttc cct gag tac ttc gtc ggg aac gtg ctg ctg agt ctt cta	2561
Cys Ser Phe Pro Glu Tyr Phe Val Gly Asn Val Leu Leu Ser Leu Leu	
810	815
gcc agc tct gtc ttc cta cac atc agc agc atc ggc aag ctg gcc atg	2609
Ala Ser Ser Val Phe Leu His Ile Ser Ser Ile Gly Lys Leu Ala Met	
825	830
acc ttc atc ttg ggg ttc acc tac ttg gtg ctg ctt ttg ctg ggt ccc	2657
Thr Phe Ile Leu Gly Phe Thr Tyr Leu Val Leu Leu Leu Leu Gly Pro	
840	845
ccg gcc gcc atc ttt gac aac tat gat cta ctg ctt ggc gtc cat ggc	2705
Pro Ala Ala Ile Phe Asp Asn Tyr Asp Leu Leu Leu Gly Val His Gly	
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ttg gct tcc tcc aat gag acc ttt gat ggg ctg gac tgc cca gct gtg	2753
Leu Ala Ser Ser Asn Glu Thr Phe Asp Gly Leu Asp Cys Pro Ala Val	
875	880
ggg agg gta gcg ctg aaa tat atg acc ccc gtg att ctg ctg gtg ttt	2801
Gly Arg Val Ala Leu Lys Tyr Met Thr Pro Val Ile Leu Leu Val Phe	
890	895
gcc ctg gca ctg tat ctg cat gca caa cag gtg gaa tcg act gcc cgc	2849
Ala Leu Ala Leu Tyr Leu His Ala Gln Gln Val Glu Ser Thr Ala Arg	
905	910
	915

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 Leu Asp Phe Leu Trp Lys Leu Gln Ala Thr Gly Glu Lys Glu Glu Met
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 Glu Glu Leu Gln Ala Tyr Asn Arg Arg Leu Leu His Asn Ile Leu Pro
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 Lys Asp Val Ala Ala His Phe Leu Ala Arg Glu Arg Arg Asn Asp Glu
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 Leu Tyr Tyr Gln Ser Cys Glu Cys Val Ala Val Met Phe Ala Ser Ile
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 Leu Met Glu Gln Met Lys His Ile Asn Glu His Ser Phe Asn Asn Phe

1065	1070	1075	
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Gln Met Lys Ile Gly Leu Asn Met Gly Pro Val Val Ala Gly Val Ile			
1080	1085	1090	
ggg gcc cga aag cca cag tat gac atc tgg gga aat acc gtg aat gtt	3425		
Gly Ala Arg Lys Pro Gln Tyr Asp Ile Trp Gly Asn Thr Val Asn Val			
1095	1100	1105	1110
tcc agt cgt atg gac agc act gga gtt cct gac cga ata cag gtg act	3473		
Ser Ser Arg Met Asp Ser Thr Gly Val Pro Asp Arg Ile Gln Val Thr			
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acg gac cta tac cag gtt cta gct gcc aag ggc tac cag ctg gag tgt	3521		
Thr Asp Leu Tyr Gln Val Leu Ala Ala Lys Gly Tyr Gln Leu Glu Cys			
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cga ggg gtg gtc aag gtg aag gga aag ggg gag atg acc acc tac ttc	3569		
Arg Gly Val Val Lys Val Lys Gly Lys Gly Glu Met Thr Thr Tyr Phe			
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Leu Asn Gly Gly Pro Ser Ser			
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<211> 1165

<212> PRT

<213> Mus musculus

<400> 717

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Arg Ala Ser Gly Phe Cys Ala Pro Arg Tyr Met Ser Cys Leu Lys Asn
             35             40             45
Ala Glu Pro Pro Ser Pro Thr Pro Ala Ala His Thr Arg Cys Pro Trp
             50             55             60
Gln Asp Glu Ala Phe Ile Arg Arg Ala Gly Pro Gly Arg Gly Val Glu
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Leu Gly Leu Arg Ser Val Ala Leu Gly Phe Asp Asp Thr Glu Val Thr
             85             90             95
Thr Pro Met Gly Thr Ala Glu Val Ala Pro Asp Thr Ser Pro Arg Ser
             100            105            110
Gly Pro Ser Cys Trp His Arg Leu Val Gln Val Phe Gln Ser Lys Gln
             115            120            125
Phe Arg Ser Ala Lys Leu Glu Arg Leu Tyr Gln Arg Tyr Phe Phe Gln
             130            135            140
Met Asn Gln Ser Ser Leu Thr Leu Leu Met Ala Val Leu Val Leu Leu
             145            150            155            160
Met Ala Val Leu Leu Thr Phe His Ala Ala Pro Ala Gln Pro Gln Pro
             165            170            175
Ala Tyr Val Ala Leu Leu Thr Cys Ala Ser Val Leu Phe Val Val Leu
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Met Val Val Cys Asn Arg His Ser Phe Arg Gln Asp Ser Met Trp Val
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 Val Ser Tyr Val Val Leu Gly Ile Leu Ala Ala Val Gln Val Gly Gly
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 Ala Leu Ala Ala Asn Pro His Ser Pro Ser Ala Gly Leu Trp Cys Pro
 225 230 235 240
 Val Phe Phe Val Tyr Ile Thr Tyr Thr Leu Leu Pro Ile Arg Met Arg
 245 250 255
 Ala Ala Val Leu Ser Gly Leu Gly Leu Ser Thr Leu His Leu Ile Leu
 260 265 270
 Ala Trp Gln Leu Asn Ser Ser Asp Pro Phe Leu Trp Lys Gln Leu Gly
 275 280 285
 Ala Asn Val Val Leu Phe Leu Cys Thr Asn Ala Ile Gly Val Cys Thr
 290 295 300
 His Tyr Pro Ala Glu Val Ser Gln Arg Gln Ala Phe Gln Glu Thr Arg
 305 310 315 320
 Gly Tyr Ile Gln Ala Arg Leu His Leu Gln His Glu Asn Arg Gln Gln
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 Glu Arg Leu Leu Leu Ser Val Leu Pro Gln His Val Ala Met Glu Met
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 Lys Glu Asp Ile Asn Thr Lys Lys Glu Asp Met Met Phe His Lys Ile
 355 360 365
 Tyr Ile Gln Lys His Asp Asn Val Ser Ile Leu Phe Ala Asp Ile Glu
 370 375 380
 Gly Phe Thr Ser Leu Ala Ser Gln Cys Thr Ala Gln Glu Leu Val Met
 385 390 395 400
 Thr Leu Asn Glu Leu Phe Ala Arg Phe Asp Lys Leu Ala Ala Glu Asn
 405 410 415
 His Cys Leu Arg Ile Lys Ile Leu Gly Asp Cys Tyr Tyr Cys Val Ser

420	425	430	
Gly Leu Pro Glu Ala Arg Ala Asp His Ala His Cys Cys Val Glu Met			
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Gly Val Asp Met Ile Glu Ala Ile Ser Leu Val Arg Glu Val Thr Gly			
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Val Asn Val Asn Met Arg Val Gly Ile His Ser Gly Arg Val His Cys			
465	470	475	480
Gly Val Leu Gly Leu Arg Lys Trp Gln Phe Asp Val Trp Ser Asn Asp			
485	490	495	
Val Thr Leu Ala Asn His Met Glu Ala Gly Gly Gly Arg Arg Ile His			
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Ile Thr Arg Ala Thr Leu Gln Tyr Leu Asn Gly Asp Tyr Glu Val Glu			
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Pro Gly Arg Gly Gly Glu Arg Asn Ala Tyr Leu Lys Glu Gln Cys Ile			
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Glu Thr Phe Leu Ile Leu Gly Ala Ser Gln Lys Arg Lys Glu Glu Lys			
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Ala Met Leu Ala Lys Leu Gln Arg Thr Arg Ala Asn Ser Met Glu Gly			
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Ser Lys Ala Phe Arg Gln Met Gly Ile Asp Asp Ser Ser Lys Asp Asn			
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Arg Gly Ala Gln Asp Ala Leu Asn Pro Glu Asp Glu Val Asp Glu Phe			
610	615	620	
Leu Gly Arg Ala Ile Asp Ala Arg Ser Ile Asp Gln Leu Arg Lys Asp			
625	630	635	640
His Val Arg Arg Phe Leu Leu Thr Phe Gln Arg Glu Asp Leu Glu Lys			
645	650	655	

Lys Tyr Ser Arg Lys Val Asp Pro Arg Phe Gly Ala Tyr Val Ala Cys
 660 665 670
 Ala Leu Leu Val Phe Cys Phe Ile Cys Phe Ile Gln Leu Leu Val Phe
 675 680 685
 Pro Tyr Ser Thr Leu Ile Leu Gly Ile Tyr Ala Ala Ile Phe Leu Leu
 690 695 700
 Leu Leu Val Thr Val Leu Ile Cys Ala Val Cys Ser Cys Gly Ser Phe
 705 710 715 720
 Phe Pro Lys Ala Leu Gln Arg Leu Ser Arg Asn Ile Val Arg Ser Arg
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 Val His Ser Thr Ala Val Gly Ile Phe Ser Val Leu Leu Val Phe Ile
 740 745 750
 Ser Ala Ile Ala Asn Met Phe Thr Cys Asn His Thr Pro Ile Arg Thr
 755 760 765
 Cys Ala Ala Arg Met Leu Asn Leu Thr Pro Ala Asp Val Thr Ala Cys
 770 775 780
 His Leu Gln Gln Leu Asn Tyr Ser Leu Gly Leu Asp Ala Pro Leu Cys
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 805 810 815
 Val Leu Leu Ser Leu Leu Ala Ser Ser Val Phe Leu His Ile Ser Ser
 820 825 830
 Ile Gly Lys Leu Ala Met Thr Phe Ile Leu Gly Phe Thr Tyr Leu Val
 835 840 845
 Leu Leu Leu Leu Gly Pro Pro Ala Ala Ile Phe Asp Asn Tyr Asp Leu
 850 855 860
 Leu Leu Gly Val His Gly Leu Ala Ser Ser Asn Glu Thr Phe Asp Gly
 865 870 875 880
 Leu Asp Cys Pro Ala Val Gly Arg Val Ala Leu Lys Tyr Met Thr Pro

	885	890	895
Val Ile Leu Leu Val Phe Ala Leu Ala Leu Tyr Leu His Ala Gln Gln			
900	905	910	
Val Glu Ser Thr Ala Arg Leu Asp Phe Leu Trp Lys Leu Gln Ala Thr			
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Gly Glu Lys Glu Glu Met Glu Glu Leu Gln Ala Tyr Asn Arg Arg Leu			
930	935	940	
Leu His Asn Ile Leu Pro Lys Asp Val Ala Ala His Phe Leu Ala Arg			
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Glu Arg Arg Asn Asp Glu Leu Tyr Tyr Gln Ser Cys Glu Cys Val Ala			
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Val Met Phe Ala Ser Ile Ala Asn Phe Ser Glu Phe Tyr Val Glu Leu			
980	985	990	
Glu Ala Asn Asn Glu Gly Val Glu Cys Leu Arg Leu Leu Asn Glu Ile			
995	1000	1005	
Ile Ala Asp Phe Asp Glu Ile Ile Ser Glu Glu Arg Phe Arg Gln Leu			
1010	1015	1020	
Glu Lys Ile Lys Thr Ile Gly Ser Thr Tyr Met Ala Ala Ser Gly Leu			
1025	1030	1035	1040
Asn Ala Ser Thr Tyr Asp Gln Val Gly Arg Ser His Ile Thr Ala Leu			
1045	1050	1055	
Ala Asp Tyr Ala Met Arg Leu Met Glu Gln Met Lys His Ile Asn Glu			
1060	1065	1070	
His Ser Phe Asn Asn Phe Gln Met Lys Ile Gly Leu Asn Met Gly Pro			
1075	1080	1085	
Val Val Ala Gly Val Ile Gly Ala Arg Lys Pro Gln Tyr Asp Ile Trp			
1090	1095	1100	
Gly Asn Thr Val Asn Val Ser Ser Arg Met Asp Ser Thr Gly Val Pro			
1105	1110	1115	1120

Asp Arg Ile Gln Val Thr Thr Asp Leu Tyr Gln Val Leu Ala Ala Lys

1125

1130

1135

Gly Tyr Gln Leu Glu Cys Arg Gly Val Val Lys Val Lys Gly Lys Gly

1140

1145

1150

Glu Met Thr Thr Tyr Phe Leu Asn Gly Gly Pro Ser Ser

1155

1160

1165

<210> 718

<211> 428

<212> DNA

<213> Mus musculus

<400> 718

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<211> 465

<212> DNA

<213> Mus musculus

<400> 719

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<211> 402

<212> DNA

<213> Mus musculus

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<210> 721

<211> 365

<212> DNA

<213> Mus musculus

<400> 721

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<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (45).. (1088)

<400> 722

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 25 30 35
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 Gly Gly Arg Lys Gln Asp Ile Gly Asp Ile Leu Gln Gln Ile Met Thr
 40 45 50

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 Asn Leu Leu Arg Glu Gln Ser Arg Thr Arg Pro Ile Ser Pro Lys Glu
 185 190 195
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aca gaa att ctg aat gaa tat ttc tat tcc cat ctc agc aac cct tac			824
Thr Glu Ile Leu Asn Glu Tyr Phe Tyr Ser His Leu Ser Asn Pro Tyr			
245	250	255	260
ccc agt gag gaa gcc aaa gag gag tta gcc aag aag tgc ggc atc aca			872
Pro Ser Glu Glu Ala Lys Glu Glu Leu Ala Lys Lys Cys Gly Ile Thr			
265	270	275	
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Val Ser Gln Val Ser Asn Trp Phe Gly Asn Lys Arg Ile Arg Tyr Lys			
280	285	290	
aag aac ata ggt aaa ttt caa gag gaa gcc aat att tat gct gcc aaa			968
Lys Asn Ile Gly Lys Phe Gln Glu Glu Ala Asn Ile Tyr Ala Ala Lys			
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acg gct gtc aca gcc acc aat gig tca gcc cat gga agc caa gct aac			1016
Thr Ala Val Thr Ala Thr Asn Val Ser Ala His Gly Ser Gln Ala Asn			
310	315	320	
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Ser Pro Ser Thr Pro Asn Ser Ala Gly Gly Tyr Pro Ser Pro Cys Tyr			
325	330	335	340
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Gln Pro Asp Arg Arg Ile Gln			
345			
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<210> 723

<211> 347

<212> PRT

<213> Mus musculus

<400> 723

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			20					25					30		
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Gln	Ile	Met	Thr	Ile	Thr	Asp	Gln	Ser	Leu	Asp	Glu	Ala	Gln	Ala	Arg
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Lys	His	Ala	Leu	Asn	Cys	His	Arg	Met	Lys	Pro	Ala	Leu	Phe	Asn	Val
	65				70				75					80	
Leu	Cys	Glu	Ile	Lys	Glu	Lys	Thr	Val	Leu	Ser	Ile	Arg	Gly	Ala	Gln
			85					90					95		
Glu	Glu	Glu	Pro	Thr	Asp	Pro	Gln	Leu	Met	Arg	Leu	Asp	Asn	Met	Leu
			100					105						110	

Leu Ala Glu Gly Val Ala Gly Pro Glu Lys Gly Gly Gly Ser Ala Ala
 115 120 125
 Ala Ala Ala Ala Ala Ala Ala Ser Gly Gly Ala Gly Ser Asp Asn Ser
 130 135 140
 Val Glu His Ser Asp Tyr Arg Ala Lys Leu Ser Gln Ile Arg Gln Ile
 145 150 155 160
 Tyr His Thr Glu Leu Glu Lys Tyr Glu Gln Ala Cys Asn Glu Phe Thr
 165 170 175
 Thr His Val Met Asn Leu Leu Arg Glu Gln Ser Arg Thr Arg Pro Ile
 180 185 190
 Ser Pro Lys Glu Ile Glu Arg Met Val Ser Ile Ile His Arg Lys Phe
 195 200 205
 Ser Ser Ile Gln Met Gln Leu Lys Gln Ser Thr Cys Glu Ala Val Met
 210 215 220
 Ile Leu Arg Ser Arg Phe Leu Asp Ala Arg Arg Lys Arg Arg Asn Phe
 225 230 235 240
 Asn Lys Gln Ala Thr Glu Ile Leu Asn Glu Tyr Phe Tyr Ser His Leu
 245 250 255
 Ser Asn Pro Tyr Pro Ser Glu Glu Ala Lys Glu Glu Leu Ala Lys Lys
 260 265 270
 Cys Gly Ile Thr Val Ser Gln Val Ser Asn Trp Phe Gly Asn Lys Arg
 275 280 285
 Ile Arg Tyr Lys Lys Asn Ile Gly Lys Phe Gln Glu Glu Ala Asn Ile
 290 295 300
 Tyr Ala Ala Lys Thr Ala Val Thr Ala Thr Asn Val Ser Ala His Gly
 305 310 315 320
 Ser Gln Ala Asn Ser Pro Ser Thr Pro Asn Ser Ala Gly Gly Tyr Pro
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340

345

<210> 724

<211> 445

<212> DNA

<213> *Mus musculus*

<400> 724

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aactgtgtgg aagccaatga gtggatagat gtcctgtgca gggtgagcag atgcaaccac 180
aacaggctca gctctttcca cccctcagcg tatctcaacg gaaactggct ctgctgccag 240
gagacgagtg aaagcacacc aggctgcaac gtingcaccgc agcatccctg cagacatcca 300
gatagatatc gatgaagaca gagaaacaga aagaatttat tctattttta ccctcagttt 360
acttaagctg cagaaaaatgg aagagacctg tgggtctata gctgtgtatc aggggccaca 420
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<210> 725

<211> 382

<212> DNA

<213> *Mus musculus*

<400> 725

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tgatgaggac gcagaagacc ggctggtgaa cgaaaagtgc cgggagatga tccatttgc 180
tgtggtgggc agcgaccatg agtatcaagt caatggcaag aggattctgg gaaggaagac 240
caagtggggc actatcgaag ttgagaatac cactcactgt gaatttgctt acctgcggga 300
tctccttatc aggacgcaca tgcaaaacat caaagacatc accagcaaca tccacttca 360

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agcctaccga gtgaagcgcc tc

382

<210> 726

<211> 2215

<212> DNA

<213> *Mus musculus*

<220>

<221> CDS

<222> (704).. (1396)

<400> 726

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 gcaagctcgt taatttctca cgttagtcca tcctaaacat taggtacatt acagggcaaa 180
 agaactcatc agtatgttct ttgtatctta atactigtig tgacagaatg atcaaagaaa 240
 aagcgatata tttttaagga gtgtgaaagt gcagtcctta acattcacia acttgagggg 300
 ttttgcttga cagtatctag gticattggga tggcttcaaa gtagattagt tgggciggac 360
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 tctctttgca tcacatctct gtccttttgg ttgcaatcat aattcttcca ttatgttcag 600
 catttcagat ctigattitt agtgttcagc cctacagcca catgatatct taaactctga 660
 agaagagaca agttttggga ctggtgacia ttgtctagag agc atg gag ggc cat 715

Met Glu Gly His

1.

gtc aag cgc ccc atg aat gca ttt atg gtg tgg tcc cgt ggt gag agg 763
 Val Lys Arg Pro Met Asn Ala Phe Met Val Trp Ser Arg Gly Glu Arg

5

10

15

20

cac aag ttg gcc cag cag aat ccc agc atg caa aat aca gag atc agc 811
 His Lys Leu Ala Gln Gln Asn Pro Ser Met Gln Asn Thr Glu Ile Ser
 25 30 35
 aag cag ctg gga tgc agg tgg aaa agc ctt aca gaa gcc gaa aaa agg 859
 Lys Gln Leu Gly Cys Arg Trp Lys Ser Leu Thr Glu Ala Glu Lys Arg
 40 45 50
 ccc ttt ttc cag gag gca cag aga ttg aag acc cta cac aga gag aaa 907
 Pro Phe Phe Gln Glu Ala Gln Arg Leu Lys Thr Leu His Arg Glu Lys
 55 60 65
 tac cca aac tat aaa tat cag cct cat cgg agg gct aaa gtg tca cag 955
 Tyr Pro Asn Tyr Lys Tyr Gln Pro His Arg Arg Ala Lys Val Ser Gln
 70 75 80
 agg agt ggc att tta cag cct gca gtt gcc tca aca aaa ctg tac aac 1003
 Arg Ser Gly Ile Leu Gln Pro Ala Val Ala Ser Thr Lys Leu Tyr Asn
 85 90 95 100
 ctt ctg cag tgg gac agg aac cca cat gcc atc aca tac agg caa gac 1051
 Leu Leu Gln Trp Asp Arg Asn Pro His Ala Ile Thr Tyr Arg Gln Asp
 105 110 115
 tgg agt aga gct gca cac ctg tac tcc aaa aac cag caa agc ttt tat 1099
 Trp Ser Arg Ala Ala His Leu Tyr Ser Lys Asn Gln Gln Ser Phe Tyr
 120 125 130
 ttg cag cct gtc gat atc ccc act ggg cac ccg cag cag cag cag cag 1147
 Leu Gln Pro Val Asp Ile Pro Thr Gly His Pro Gln Gln Gln Gln Gln
 135 140 145
 cag cag cag cag ttc cat aac cac cac cag cag caa cag cag ttc tat 1195
 Gln Gln Gln Gln Phe His Asn His His Gln Gln Gln Gln Gln Phe Tyr
 150 155 160
 gac cac cag cag cag cag cag cag cag cag cag cag cag ttc cat gac 1243
 Asp His Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Phe His Asp

165 170 175 180
 cac cac cag cag aag cag cag ttt cat gac cac cac cag cag caa cag 1291
 His His Gln Gln Lys Gln Gln Phe His Asp His His Gln Gln Gln Gln
 185 190 195
 cag ttc cat gac cac cac cac cac cag cag cag cag cag ttc cat gac 1339
 Gln Phe His Asp His His His His Gln Gln Gln Gln Gln Phe His Asp
 200 205 210
 cac cac cag cag caa cag cag ttc cat gac cac cag cag cag cag cag 1387
 His His Gln Gln Gln Gln Gln Phe His Asp His Gln Gln Gln Gln Gln
 215 220 225
 cag cag tag cagcagcagt tccatgacca ccaccagcag aagcagcagt 1436
 Gln Gln
 230
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 aaatgttgt aaagatgtgt agtgtgtcag gaaggagaaa gcttagaaat gctctacata 2096
 gtttttggtt aacatagtac tagttgcatt gttgtggcat ttaatccaca gaagaaacca 2156
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<210> 727

<211> 230

<212> PRT

<213> Mus musculus

<400> 727

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      20             25             30
Thr Glu Ile Ser Lys Gln Leu Gly Cys Arg Trp Lys Ser Leu Thr Glu
      35             40             45
Ala Glu Lys Arg Pro Phe Phe Gln Glu Ala Gln Arg Leu Lys Thr Leu
      50             55             60
His Arg Glu Lys Tyr Pro Asn Tyr Lys Tyr Gln Pro His Arg Arg Ala
      65             70             75             80
Lys Val Ser Gln Arg Ser Gly Ile Leu Gln Pro Ala Val Ala Ser Thr
      85             90             95
Lys Leu Tyr Asn Leu Leu Gln Trp Asp Arg Asn Pro His Ala Ile Thr
      100            105            110
Tyr Arg Gln Asp Trp Ser Arg Ala Ala His Leu Tyr Ser Lys Asn Gln
      115            120            125
Gln Ser Phe Tyr Leu Gln Pro Val Asp Ile Pro Thr Gly His Pro Gln
      130            135            140
Gln Gln Gln Gln Gln Gln Gln Gln Phe His Asn His His Gln Gln Gln
      145            150            155            160
Gln Gln Phe Tyr Asp His Gln Gln Gln Gln Gln Gln Gln Gln Gln
      165            170            175
Gln Phe His Asp His His Gln Gln Lys Gln Gln Phe His Asp His His
      180            185            190
Gln Gln Gln Gln Gln Phe His Asp His His His His Gln Gln Gln Gln

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 Gln Phe His Asp His His Gln Gln Gln Gln Gln Phe His Asp His Gln
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<210> 728

<211> 2166

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (13).. (1707)

<400> 728

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gtc tcg gcc ccc gcg ttt tac gcc ccg cag aag aag ttc gcc ccg gtt 99

Val Ser Ala Pro Ala Phe Tyr Ala Pro Gln Lys Lys Phe Ala Pro Val

15 20 25

gtg gcc cca aag ccc aaa gtg aat cct ttc cgg cct ggg gac agc gag 147

Val Ala Pro Lys Pro Lys Val Asn Pro Phe Arg Pro Gly Asp Ser Glu

30 35 40 45

cct cct gta gca gcc ggg gcc caa aga gcg cag atg ggt cgg gtg ggc 195

Pro Pro Val Ala Ala Gly Ala Gln Arg Ala Gln Met Gly Arg Val Gly

50 55 60

gag atc cca cca cca ccc ccg gaa gac ttt cct ttg ccc cct cct ccc 243

Glu Ile Pro Pro Pro Pro Pro Glu Asp Phe Pro Leu Pro Pro Pro Pro
 65 70 75
 ctt att ggg gag ggc gac gac tca gag ggt gcc ctg gga ggt gcc ttc 291
 Leu Ile Gly Glu Gly Asp Asp Ser Glu Gly Ala Leu Gly Gly Ala Phe
 80 85 90
 cca cct cca cct ccc ccg atg atc gag gaa cca ttc ccc cct gct cct 339
 Pro Pro Pro Pro Pro Pro Met Ile Glu Glu Pro Phe Pro Pro Ala Pro
 95 100 105
 ctg gag gag gac atc ttc ccc tcc cct cca cct cca ctg gag gag gag 387
 Leu Glu Glu Asp Ile Phe Pro Ser Pro Pro Pro Pro Leu Glu Glu Glu
 110 115 120 125
 gga ggg cct gag gcc cct acc cag ctc cca ccg cag ccc agg gag aaa 435
 Gly Gly Pro Glu Ala Pro Thr Gln Leu Pro Pro Gln Pro Arg Glu Lys
 130 135 140
 gtg tgc agt att gac ctg gag att gac tct ctg tcc tca ctg ctg gac 483
 Val Cys Ser Ile Asp Leu Glu Ile Asp Ser Leu Ser Ser Leu Leu Asp
 145 150 155
 gac atg acc aag aac gat ccc ttc aaa gcc cgg gla tca tcc gga tat 531
 Asp Met Thr Lys Asn Asp Pro Phe Lys Ala Arg Val Ser Ser Gly Tyr
 160 165 170
 gta ccc cca cca gtt gcc act cca ttt gtt ccc aag cct agt acc aaa 579
 Val Pro Pro Pro Val Ala Thr Pro Phe Val Pro Lys Pro Ser Thr Lys
 175 180 185
 cct gcc cct ggg ggc aca gca ccc ttg cct cct tgg aag acc cct tct 627
 Pro Ala Pro Gly Gly Thr Ala Pro Leu Pro Pro Trp Lys Thr Pro Ser
 190 195 200 205
 agc tcc cag cca cca cct cag ccg cag gcc aag cct cag gtc cag ctc 675
 Ser Ser Gln Pro Pro Pro Gln Pro Gln Ala Lys Pro Gln Val Gln Leu
 210 215 220

cat gtc cag cct cag gcc aag ccc cat gtc caa ccc cag cct gtg tct 723
His Val Gln Pro Gln Ala Lys Pro His Val Gln Pro Gln Pro Val Ser
225 230 235
tct gct aat aca cag ccc cgg ggt ccc ctt tct cag gca cca act cca 771
Ser Ala Asn Thr Gln Pro Arg Gly Pro Leu Ser Gln Ala Pro Thr Pro
240 245 250
gca cct aag ttt gct cca gtg gct cct aaa ttt act ccc gtg gtt tcc 819
Ala Pro Lys Phe Ala Pro Val Ala Pro Lys Phe Thr Pro Val Val Ser
255 260 265
aag ttc agc cct ggt gct cca agt gga cct ggg cca cag ccc aat caa 867
Lys Phe Ser Pro Gly Ala Pro Ser Gly Pro Gly Pro Gln Pro Asn Gln
270 275 280 285
aaa atg gtg cct ccg gat gct cct tct tct gtg agc aca ggc tcc cct 915
Lys Met Val Pro Pro Asp Ala Pro Ser Ser Val Ser Thr Gly Ser Pro
290 295 300
cag ccc cct agc ttc acc tat gct cag cag aag gag aag ccc cta gtt 963
Gln Pro Pro Ser Phe Thr Tyr Ala Gln Gln Lys Glu Lys Pro Leu Val
305 310 315
caa gag aag cag cac cca cag cct cca cca gct caa aac caa aac cag 1011
Gln Glu Lys Gln His Pro Gln Pro Pro Pro Ala Gln Asn Gln Asn Gln
320 325 330
gta cgc tct cct gga ggc cca ggc ccc ttg acc ctg aag gag gta gag 1059
Val Arg Ser Pro Gly Gly Pro Gly Pro Leu Thr Leu Lys Glu Val Glu
335 340 345
gag ttg gag cag ctg acc cag cag ctg atg cag gac atg gaa cac cct 1107
Glu Leu Glu Gln Leu Thr Gln Gln Leu Met Gln Asp Met Glu His Pro
350 355 360 365
cag agg cag agc gtg gca gtg aat gag tcc tgt ggc aaa tgc aat cag 1155
Gln Arg Gln Ser Val Ala Val Asn Glu Ser Cys Gly Lys Cys Asn Gln

370	375	380	
cca ctg gcc cgt gca cag cct gcg gtt cgt gca ctg gga caa ctg ttc	1203		
Pro Leu Ala Arg Ala Gln Pro Ala Val Arg Ala Leu Gly Gln Leu Phe			
385	390	395	
cac atc acc tgc ttc act tgc cat cag tgt cag cag cag ctg cag gga	1251		
His Ile Thr Cys Phe Thr Cys His Gln Cys Gln Gln Gln Leu Gln Gly			
400	405	410	
cag cag ttc tat agc ctg gag gga gca cca tat tgt gag ggc tgc tac	1299		
Gln Gln Phe Tyr Ser Leu Glu Gly Ala Pro Tyr Cys Glu Gly Cys Tyr			
415	420	425	
acc gac act ttg gag aag tgc aac acc tgt ggg cag ccc atc act gac	1347		
Thr Asp Thr Leu Glu Lys Cys Asn Thr Cys Gly Gln Pro Ile Thr Asp			
430	435	440	445
cgc atg ctg agg gcc act ggc aaa gcc tac cac cca cag tgc ttc acc	1395		
Arg Met Leu Arg Ala Thr Gly Lys Ala Tyr His Pro Gln Cys Phe Thr			
450	455	460	
tgt gtg gtc tgc gcc tgt ccc ctg gag ggc acc tcc ttc att gtg gac	1443		
Cys Val Val Cys Ala Cys Pro Leu Glu Gly Thr Ser Phe Ile Val Asp			
465	470	475	
cag gcc aat cag ccc cac tgt gtc cct gac tat cac aag caa tac gct	1491		
Gln Ala Asn Gln Pro His Cys Val Pro Asp Tyr His Lys Gln Tyr Ala			
480	485	490	
cca agg tgc tcc gtc tgc tgc gag cca atc atg cct gag cct ggc cga	1539		
Pro Arg Cys Ser Val Cys Ser Glu Pro Ile Met Pro Glu Pro Gly Arg			
495	500	505	
gac gag act gtg cga gta gtg gcg ctg gat aag aac ttt cat atg aag	1587		
Asp Glu Thr Val Arg Val Val Ala Leu Asp Lys Asn Phe His Met Lys			
510	515	520	525
tgt tac aag tgt gag gac tgt ggg aaa cct ctg tcc att gag gca gat	1635		

Cys Tyr Lys Cys Glu Asp Cys Gly Lys Pro Leu Ser Ile Glu Ala Asp
 530 535 540
 gac aac ggc tgt ttc cct ctg gat ggc cac gtc ctt tgt cgg aag tgc 1683
 Asp Asn Gly Cys Phe Pro Leu Asp Gly His Val Leu Cys Arg Lys Cys
 545 550 555
 cac tcc gct aga gcc cag acc tga gttgagatgg acctccttcc agaccacagg 1737
 His Ser Ala Arg Ala Gln Thr
 560 565
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<210> 729

<211> 564

<212> PRT

<213> Mus musculus

<400> 729

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 Lys Pro Lys Val Asn Pro Phe Arg Pro Gly Asp Ser Glu Pro Pro Val
 35 40 45

Ala Ala Gly Ala Gln Arg Ala Gln Met Gly Arg Val Gly Glu Ile Pro
 50 55 60
 Pro Pro Pro Pro Glu Asp Phe Pro Leu Pro Pro Pro Pro Leu Ile Gly
 65 70 75 80
 Glu Gly Asp Asp Ser Glu Gly Ala Leu Gly Gly Ala Phe Pro Pro Pro
 85 90 95
 Pro Pro Pro Met Ile Glu Glu Pro Phe Pro Pro Ala Pro Leu Glu Glu
 100 105 110
 Asp Ile Phe Pro Ser Pro Pro Pro Pro Leu Glu Glu Glu Gly Gly Pro
 115 120 125
 Glu Ala Pro Thr Gln Leu Pro Pro Gln Pro Arg Glu Lys Val Cys Ser
 130 135 140
 Ile Asp Leu Glu Ile Asp Ser Leu Ser Ser Leu Leu Asp Asp Met Thr
 145 150 155 160
 Lys Asn Asp Pro Phe Lys Ala Arg Val Ser Ser Gly Tyr Val Pro Pro
 165 170 175
 Pro Val Ala Thr Pro Phe Val Pro Lys Pro Ser Thr Lys Pro Ala Pro
 180 185 190
 Gly Gly Thr Ala Pro Leu Pro Pro Trp Lys Thr Pro Ser Ser Ser Gln
 195 200 205
 Pro Pro Pro Gln Pro Gln Ala Lys Pro Gln Val Gln Leu His Val Gln
 210 215 220
 Pro Gln Ala Lys Pro His Val Gln Pro Gln Pro Val Ser Ser Ala Asn
 225 230 235 240
 Thr Gln Pro Arg Gly Pro Leu Ser Gln Ala Pro Thr Pro Ala Pro Lys
 245 250 255
 Phe Ala Pro Val Ala Pro Lys Phe Thr Pro Val Val Ser Lys Phe Ser
 260 265 270
 Pro Gly Ala Pro Ser Gly Pro Gly Pro Gln Pro Asn Gln Lys Met Val

275	280	285
Pro Pro Asp Ala Pro Ser Ser Val Ser Thr Gly Ser Pro Gln Pro Pro		
290	295	300
Ser Phe Thr Tyr Ala Gln Gln Lys Glu Lys Pro Leu Val Gln Glu Lys		
305	310	315
Gln His Pro Gln Pro Pro Pro Ala Gln Asn Gln Asn Gln Val Arg Ser		
325	330	335
Pro Gly Gly Pro Gly Pro Leu Thr Leu Lys Glu Val Glu Glu Leu Glu		
340	345	350
Gln Leu Thr Gln Gln Leu Met Gln Asp Met Glu His Pro Gln Arg Gln		
355	360	365
Ser Val Ala Val Asn Glu Ser Cys Gly Lys Cys Asn Gln Pro Leu Ala		
370	375	380
Arg Ala Gln Pro Ala Val Arg Ala Leu Gly Gln Leu Phe His Ile Thr		
385	390	395
Cys Phe Thr Cys His Gln Cys Gln Gln Gln Leu Gln Gly Gln Gln Phe		
405	410	415
Tyr Ser Leu Glu Gly Ala Pro Tyr Cys Glu Gly Cys Tyr Thr Asp Thr		
420	425	430
Leu Glu Lys Cys Asn Thr Cys Gly Gln Pro Ile Thr Asp Arg Met Leu		
435	440	445
Arg Ala Thr Gly Lys Ala Tyr His Pro Gln Cys Phe Thr Cys Val Val		
450	455	460
Cys Ala Cys Pro Leu Glu Gly Thr Ser Phe Ile Val Asp Gln Ala Asn		
465	470	475
Gln Pro His Cys Val Pro Asp Tyr His Lys Gln Tyr Ala Pro Arg Cys		
485	490	495
Ser Val Cys Ser Glu Pro Ile Met Pro Glu Pro Gly Arg Asp Glu Thr		
500	505	510

Val Arg Val Val Ala Leu Asp Lys Asn Phe His Met Lys Cys Tyr Lys

515

520

525

Cys Glu Asp Cys Gly Lys Pro Leu Ser Ile Glu Ala Asp Asp Asn Gly

530

535

540

Cys Phe Pro Leu Asp Gly His Val Leu Cys Arg Lys Cys His Ser Ala

545

550

555

560

Arg Ala Gln Thr

<210> 730

<211> 2457

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (53).. (2089)

<400> 730

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Met Gly

1

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Asp Ser His Glu Asp Thr Ser Ala Thr Val Pro Glu Ala Val Ala Glu

5

10

15

gaa gtg tct cta ttc agc aca acg gac att gtt ctg ttt tct ctc atc 154

Glu Val Ser Leu Phe Ser Thr Thr Asp Ile Val Leu Phe Ser Leu Ile

20

25

30

gtg ggg gtc ctg acc tac tgg ttc atc ttt aaa aag aag aaa gaa gag 202

Val Gly Val Leu Thr Tyr Trp Phe Ile Phe Lys Lys Lys Lys Glu Glu

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Ile Pro Glu Phe Ser Lys Ile Gln Thr Thr Ala Pro Pro Val Lys Glu				
55	60	65		
agc agc ttc gtg gaa aag atg aag aaa acg gga agg aac att att gta	298			
Ser Ser Phe Val Glu Lys Met Lys Lys Thr Gly Arg Asn Ile Ile Val				
70	75	80		
ttc tat ggc tcc cag acg gga acc gcg gag gag ttt gcc aac cgg ctg	346			
Phe Tyr Gly Ser Gln Thr Gly Thr Ala Glu Glu Phe Ala Asn Arg Leu				
85	90	95		
tcc aag gat gcc cac cgc tat ggg atg cgg ggc atg tct gca gac cct	394			
Ser Lys Asp Ala His Arg Tyr Gly Met Arg Gly Met Ser Ala Asp Pro				
100	105	110		
gaa gag tat gac ttg gcc gac ctg agc agc ctg cct gag atc gac aag	442			
Glu Glu Tyr Asp Leu Ala Asp Leu Ser Ser Leu Pro Glu Ile Asp Lys				
115	120	125	130	
tcc ctg gta gtc ttc tgc atg gcc aca tac gga gaa ggc gac ccc acc	490			
Ser Leu Val Val Phe Cys Met Ala Thr Tyr Gly Glu Gly Asp Pro Thr				
135	140	145		
gac aac gcg cag gac ttc tat gat tgg ctg cag gag act gac gtg gac	538			
Asp Asn Ala Gln Asp Phe Tyr Asp Trp Leu Gln Glu Thr Asp Val Asp				
150	155	160		
ctc acg ggt gtc aag ttt gct gtg ttt ggt ctc ggg aac aag acc tat	586			
Leu Thr Gly Val Lys Phe Ala Val Phe Gly Leu Gly Asn Lys Thr Tyr				
165	170	175		
gag cac ttc aac gcc atg ggc aag tat gtg gac cag cgg ctg gag cag	634			
Glu His Phe Asn Ala Met Gly Lys Tyr Val Asp Gln Arg Leu Glu Gln				
180	185	190		
ctt ggc gcc cag cga atc ttt gag ttg ggc ctt ggt gat gac gac ggg	682			

1761/2644

tcg aat aag aag cat ccg ttc ccc tgc ccc acc acc tac cgc acg gcc	1162
Ser Asn Lys Lys His Pro Phe Pro Cys Pro Thr Thr Tyr Arg Thr Ala	
355 360 365 370	
ctc acc tac tac ctg gac atc act aac ccg cca cga acc aac gtg ctc	1210
Leu Thr Tyr Tyr Leu Asp Ile Thr Asn Pro Pro Arg Thr Asn Val Leu	
375 380 385	
tac gag ctg gcc cag tac gcc tca gag ccc tcg gag cag gaa cac ctg	1258
Tyr Glu Leu Ala Gln Tyr Ala Ser Glu Pro Ser Glu Gln Glu His Leu	
390 395 400	
cac aag atg gcg tcc tcc tcc ggc gag ggc aag gag ctg tac ctg agc	1306
His Lys Met Ala Ser Ser Ser Gly Glu Gly Lys Glu Leu Tyr Leu Ser	
405 410 415	
tgg gtg gtg gag gcc cgg agg cac atc cta gcc att ctc caa gac tac	1354
Trp Val Val Glu Ala Arg Arg His Ile Leu Ala Ile Leu Gln Asp Tyr	
420 425 430	
ccg tcc ctg cgg cca ccc atc gac cac ctg tgc gag ctc ctc ccg agg	1402
Pro Ser Leu Arg Pro Pro Ile Asp His Leu Cys Glu Leu Leu Pro Arg	
435 440 445 450	
ctg cag gcc cgc tac tat tcc att gcc tcg tcg tct aag gtc cac ccc	1450
Leu Gln Ala Arg Tyr Tyr Ser Ile Ala Ser Ser Ser Lys Val His Pro	
455 460 465	
aac tcc gtg cac atc tgc gcc gtg gct gtg gag tat gaa gcg aag tct	1498
Asn Ser Val His Ile Cys Ala Val Ala Val Glu Tyr Glu Ala Lys Ser	
470 475 480	
gga cga gtg aac aag ggg gtg gcc acc agc tgg ctt cgg acc aag gaa	1546
Gly Arg Val Asn Lys Gly Val Ala Thr Ser Trp Leu Arg Thr Lys Glu	
485 490 495	
cca gca gga gag aat ggc cgc cgg gcc ctg gtc ccc atg ttc gtc cgc	1594
Pro Ala Gly Glu Asn Gly Arg Arg Ala Leu Val Pro Met Phe Val Arg	

500	505	510	
aag tcc cag ttc cgc ttg cct ttc aag ccc acc aca cct gtt atc atg	1642		
Lys Ser Gln Phe Arg Leu Pro Phe Lys Pro Thr Thr Pro Val Ile Met			
515	520	525	530
gtg ggc ccc ggc act ggg gtt gcc cct ttc atg ggc ttc atc cag gag	1690		
Val Gly Pro Gly Thr Gly Val Ala Pro Phe Met Gly Phe Ile Gln Glu			
535	540	545	
cgg gct tgg ctt cga gag caa ggc aag gag gtc gga gag acg ctg ctc	1738		
Arg Ala Trp Leu Arg Glu Gln Gly Lys Glu Val Gly Glu Thr Leu Leu			
550	555	560	
tac tac ggc tgc cgg cgc tgc gat gag gac tat ctg tac cgc gag gag	1786		
Tyr Tyr Gly Cys Arg Arg Ser Asp Glu Asp Tyr Leu Tyr Arg Glu Glu			
565	570	575	
ctg gcg cgc ttc cac aag gac ggc gcc ctc acg cag ctt aat gtg gcc	1834		
Leu Ala Arg Phe His Lys Asp Gly Ala Leu Thr Gln Leu Asn Val Ala			
580	585	590	
ttt tcc cgt gag cag gcc cac aag gtc tat gtt cag cac ctg ctc aag	1882		
Phe Ser Arg Glu Gln Ala His Lys Val Tyr Val Gln His Leu Leu Lys			
595	600	605	610
agg gac aaa gag cac ctg tgg aag ctg atc cac gaa ggt ggt gcc cac	1930		
Arg Asp Lys Glu His Leu Trp Lys Leu Ile His Glu Gly Gly Ala His			
615	620	625	
atc tat gtc tgc ggg gat gct cga aat atg gcc aaa gat gtg cag aac	1978		
Ile Tyr Val Cys Gly Asp Ala Arg Asn Met Ala Lys Asp Val Gln Asn			
630	635	640	
aca ttc tat gac atc gtg gcc gag ttt ggg ccc atg gag cac acc cag	2026		
Thr Phe Tyr Asp Ile Val Ala Glu Phe Gly Pro Met Glu His Thr Gln			
645	650	655	
gct gtg gac tat gtt aag aag ctc atg acc aag ggc cgc tac tcg ctg	2074		

Ala Val Asp Tyr Val Lys Lys Leu Met Thr Lys Gly Arg Tyr Ser Leu

660

665

670

gat gta tgg agc tag gagctgccgc cccccacccc tcgtccctg taatcacgtc 2129

Asp Val Trp Ser

675

cttaacttcc ttctgccgac ctccacctct ggiggittcct gccctgcctg gacacaggga 2189

ggcccaggga ctgactcctg gcctgagtga tgccctcctg ggcccttagg cagagcctgg 2249

tccattgtac caggcagcct agcccagccc agggcacatg gcaagaggga ctggaccac 2309

ctttgggtga tgggtgcctt aggtccccag cagctgtaca gaaggggctc ttctctccac 2369

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tggcccttgg aataaagttg ttttctgt 2457

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<211> 678

<212> PRT

<213> Mus musculus

<400> 731

Met Gly Asp Ser His Glu Asp Thr Ser Ala Thr Val Pro Glu Ala Val

1

5

10

15

Ala Glu Glu Val Ser Leu Phe Ser Thr Thr Asp Ile Val Leu Phe Ser

20

25

30

Leu Ile Val Gly Val Leu Thr Tyr Trp Phe Ile Phe Lys Lys Lys Lys

35

40

45

Glu Glu Ile Pro Glu Phe Ser Lys Ile Gln Thr Thr Ala Pro Pro Val

50

55

60

Lys Glu Ser Ser Phe Val Glu Lys Met Lys Lys Thr Gly Arg Asn Ile

65

70

75

80

Ile Val Phe Tyr Gly Ser Gln Thr Gly Thr Ala Glu Glu Phe Ala Asn

	85	90	95
Arg Leu Ser Lys Asp Ala His Arg Tyr Gly Met Arg Gly Met Ser Ala			
100	105	110	
Asp Pro Glu Glu Tyr Asp Leu Ala Asp Leu Ser Ser Leu Pro Glu Ile			
115	120	125	
Asp Lys Ser Leu Val Val Phe Cys Met Ala Thr Tyr Gly Glu Gly Asp			
130	135	140	
Pro Thr Asp Asn Ala Gln Asp Phe Tyr Asp Trp Leu Gln Glu Thr Asp			
145	150	155	160
Val Asp Leu Thr Gly Val Lys Phe Ala Val Phe Gly Leu Gly Asn Lys			
165	170	175	
Thr Tyr Glu His Phe Asn Ala Met Gly Lys Tyr Val Asp Gln Arg Leu			
180	185	190	
Glu Gln Leu Gly Ala Gln Arg Ile Phe Glu Leu Gly Leu Gly Asp Asp			
195	200	205	
Asp Gly Asn Leu Glu Glu Asp Phe Ile Thr Trp Arg Glu Gln Phe Trp			
210	215	220	
Pro Ala Val Cys Glu Phe Phe Gly Val Glu Ala Thr Gly Glu Glu Ser			
225	230	235	240
Ser Ile Arg Gln Tyr Glu Leu Val Val His Glu Asp Met Asp Thr Ala			
245	250	255	
Lys Val Tyr Thr Gly Glu Met Gly Arg Leu Lys Ser Tyr Glu Asn Gln			
260	265	270	
Lys Pro Pro Phe Asp Ala Lys Asn Pro Phe Leu Ala Ala Val Thr Thr			
275	280	285	
Asn Arg Lys Leu Asn Gln Gly Thr Glu Arg His Leu Met His Leu Glu			
290	295	300	
Leu Asp Ile Ser Asp Ser Lys Ile Arg Tyr Glu Ser Gly Asp His Val			
305	310	315	320

Ala Val Tyr Pro Ala Asn Asp Ser Thr Leu Val Asn Gln Ile Gly Glu
 325 330 335
 Ile Leu Gly Ala Asp Leu Asp Val Ile Met Ser Leu Asn Asn Leu Asp
 340 345 350
 Glu Glu Ser Asn Lys Lys His Pro Phe Pro Cys Pro Thr Thr Tyr Arg
 355 360 365
 Thr Ala Leu Thr Tyr Tyr Leu Asp Ile Thr Asn Pro Pro Arg Thr Asn
 370 375 380
 Val Leu Tyr Glu Leu Ala Gln Tyr Ala Ser Glu Pro Ser Glu Gln Glu
 385 390 395 400
 His Leu His Lys Met Ala Ser Ser Ser Gly Glu Gly Lys Glu Leu Tyr
 405 410 415
 Leu Ser Trp Val Val Glu Ala Arg Arg His Ile Leu Ala Ile Leu Gln
 420 425 430
 Asp Tyr Pro Ser Leu Arg Pro Pro Ile Asp His Leu Cys Glu Leu Leu
 435 440 445
 Pro Arg Leu Gln Ala Arg Tyr Tyr Ser Ile Ala Ser Ser Ser Lys Val
 450 455 460
 His Pro Asn Ser Val His Ile Cys Ala Val Ala Val Glu Tyr Glu Ala
 465 470 475 480
 Lys Ser Gly Arg Val Asn Lys Gly Val Ala Thr Ser Trp Leu Arg Thr
 485 490 495
 Lys Glu Pro Ala Gly Glu Asn Gly Arg Arg Ala Leu Val Pro Met Phe
 500 505 510
 Val Arg Lys Ser Gln Phe Arg Leu Pro Phe Lys Pro Thr Thr Pro Val
 515 520 525
 Ile Met Val Gly Pro Gly Thr Gly Val Ala Pro Phe Met Gly Phe Ile
 530 535 540
 Gln Glu Arg Ala Trp Leu Arg Glu Gln Gly Lys Glu Val Gly Glu Thr

545 550 555 560
 Leu Leu Tyr Tyr Gly Cys Arg Arg Ser Asp Glu Asp Tyr Leu Tyr Arg
 565 570 575
 Glu Glu Leu Ala Arg Phe His Lys Asp Gly Ala Leu Thr Gln Leu Asn
 580 585 590
 Val Ala Phe Ser Arg Glu Gln Ala His Lys Val Tyr Val Gln His Leu
 595 600 605
 Leu Lys Arg Asp Lys Glu His Leu Trp Lys Leu Ile His Glu Gly Gly
 610 615 620
 Ala His Ile Tyr Val Cys Gly Asp Ala Arg Asn Met Ala Lys Asp Val
 625 630 635 640
 Gln Asn Thr Phe Tyr Asp Ile Val Ala Glu Phe Gly Pro Met Glu His
 645 650 655
 Thr Gln Ala Val Asp Tyr Val Lys Lys Leu Met Thr Lys Gly Arg Tyr
 660 665 670
 Ser Leu Asp Val Trp Ser
 675

<210> 732

<211> 2176

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (13).. (984)

<400> 732

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Met Val Cys Cys Gly Pro Gly Arg Met Leu Leu Gly Trp

1 5 10

gcc ggg ttg cta gtc ctg gct gct ctc tgc ctg ctc cag gtg ccc gga 99
Ala Gly Leu Leu Val Leu Ala Ala Leu Cys Leu Leu Gln Val Pro Gly

15 20 25

gct cag gct gca gcc tgt gag cct gtc cgc atc ccg ctg tgc aag tcc 147
Ala Gln Ala Ala Ala Cys Glu Pro Val Arg Ile Pro Leu Cys Lys Ser

30 35 40 45

ctt ccc tgg aac atg acc aag atg ccc aac cac ctg cac cac agc acc 195
Leu Pro Trp Asn Met Thr Lys Met Pro Asn His Leu His His Ser Thr

50 55 60

cag gct aac gcc atc ctg gcc atg gaa cag ttc gaa ggg ctg ctg ggc 243
Gln Ala Asn Ala Ile Leu Ala Met Glu Gln Phe Glu Gly Leu Leu Gly

65 70 75

acc cac tgc agc ccg gat ctt ctc ttc ttc ctc tgt gca atg tac gca 291
Thr His Cys Ser Pro Asp Leu Leu Phe Phe Leu Cys Ala Met Tyr Ala

80 85 90

ccc att tgc acc atc gac ttc cag cac gag ccc atc aag ccc tgc aag 339
Pro Ile Cys Thr Ile Asp Phe Gln His Glu Pro Ile Lys Pro Cys Lys

95 100 105

tct gtg tgt gag cgc gcc cga cag ggc tgc gag ccc att ctc atc aag 387
Ser Val Cys Glu Arg Ala Arg Gln Gly Cys Glu Pro Ile Leu Ile Lys

110 115 120 125

tac cgc cac tgc tgg ccg gaa agc ttg gcc tgc gac gag ctg ccg gtg 435
Tyr Arg His Ser Trp Pro Glu Ser Leu Ala Cys Asp Glu Leu Pro Val

130 135 140

tac gac cgc ggc gtg tgc atc tct cct gag gcc atc gtc acc gcg gac 483
Tyr Asp Arg Gly Val Cys Ile Ser Pro Glu Ala Ile Val Thr Ala Asp

145 150 155

gga gcg gat ttt cct atg gat tca agt act gga cac tgc aga ggg gca 531
 Gly Ala Asp Phe Pro Met Asp Ser Ser Thr Gly His Cys Arg Gly Ala
 160 165 170
 agc agc gaa cgt tgc aaa tgt aag cct gtc aga gct aca cag aag acc 579
 Ser Ser Glu Arg Cys Lys Cys Lys Pro Val Arg Ala Thr Gln Lys Thr
 175 180 185
 tat ttc cgg aac aat tac aac tat gtc atc cgg gct aaa gtt aaa gag 627
 Tyr Phe Arg Asn Asn Tyr Asn Tyr Val Ile Arg Ala Lys Val Lys Glu
 190 195 200 205
 gta aag atg aaa tgt cat gat gtg acc gcc gtt gtg gaa gtg aag gaa 675
 Val Lys Met Lys Cys His Asp Val Thr Ala Val Val Glu Val Lys Glu
 210 215 220
 att cta aag gca tca ctg gta aac att cca agg gac acc gtc aat ctt 723
 Ile Leu Lys Ala Ser Leu Val Asn Ile Pro Arg Asp Thr Val Asn Leu
 225 230 235
 tat acc acc tct ggc tgc ctc tgt cct cca ctt act gtc aat gag gaa 771
 Tyr Thr Thr Ser Gly Cys Leu Cys Pro Pro Leu Thr Val Asn Glu Glu
 240 245 250
 tat gtc atc atg ggc tat gaa gac gag gaa cgt tcc agg tta ctc ttg 819
 Tyr Val Ile Met Gly Tyr Glu Asp Glu Glu Arg Ser Arg Leu Leu Leu
 255 260 265
 gta gaa ggc tct ata gct gag aag tgg aag gat cgg ctt ggt aag aaa 867
 Val Glu Gly Ser Ile Ala Glu Lys Trp Lys Asp Arg Leu Gly Lys Lys
 270 275 280 285
 gtc aag cgc tgg gat atg aaa ctc cga cac ctt gga ctg ggt aaa act 915
 Val Lys Arg Trp Asp Met Lys Leu Arg His Leu Gly Leu Gly Lys Thr
 290 295 300
 gat gct agc gat tcc act cag aat cag aag tct ggc agg aac tct aat 963
 Asp Ala Ser Asp Ser Thr Gln Asn Gln Lys Ser Gly Arg Asn Ser Asn

305 310 315
 ccc cgg cca gca cgc agc taa atcctgaaat gtaaaaggcc acacccacgg 1014
 Pro Arg Pro Ala Arg Ser
 320
 actcccttct aagactggcg ctggiggact aacaaaggaa aaccgcacag ttgtgctcgt 1074
 gaccgattgt ttaccgcaga caccgcgtgg ctaccgaagt tacttccggt cccctttctc 1134
 ctgctttcta atggcgtggg gtiagatcct ttaataatggt atatatcttg tttcatcaat 1194
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 tacaggacac ggaaatgtgc acatttgttt acttttttgc ttccttttgc tttgggcttg 1974
 tgatttttgt ttttgggtgt tttatgtctg tttttgggg ggtgggtagg ttttaagccat 2034
 tgcacattca agttgaacta gattagagta gactaggctc attggcctag acattatgat 2094
 ttgaatttgt gttgtttaat gctccatcaa gatgtctaataaaaaggaata tggttgtcaa 2154
 cagagacgac aacaacaaca aa 2176

<210> 733

<211> 323

<212> PRT

<213> Mus musculus

<400> 733

Met Val Cys Cys Gly Pro Gly Arg Met Leu Leu Gly Trp Ala Gly Leu
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 Leu Val Leu Ala Ala Leu Cys Leu Leu Gln Val Pro Gly Ala Gln Ala
 20 25 30
 Ala Ala Cys Glu Pro Val Arg Ile Pro Leu Cys Lys Ser Leu Pro Trp
 35 40 45
 Asn Met Thr Lys Met Pro Asn His Leu His His Ser Thr Gln Ala Asn
 50 55 60
 Ala Ile Leu Ala Met Glu Gln Phe Glu Gly Leu Leu Gly Thr His Cys
 65 70 75 80
 Ser Pro Asp Leu Leu Phe Phe Leu Cys Ala Met Tyr Ala Pro Ile Cys
 85 90 95
 Thr Ile Asp Phe Gln His Glu Pro Ile Lys Pro Cys Lys Ser Val Cys
 100 105 110
 Glu Arg Ala Arg Gln Gly Cys Glu Pro Ile Leu Ile Lys Tyr Arg His
 115 120 125
 Ser Trp Pro Glu Ser Leu Ala Cys Asp Glu Leu Pro Val Tyr Asp Arg
 130 135 140
 Gly Val Cys Ile Ser Pro Glu Ala Ile Val Thr Ala Asp Gly Ala Asp
 145 150 155 160
 Phe Pro Met Asp Ser Ser Thr Gly His Cys Arg Gly Ala Ser Ser Glu
 165 170 175
 Arg Cys Lys Cys Lys Pro Val Arg Ala Thr Gln Lys Thr Tyr Phe Arg
 180 185 190
 Asn Asn Tyr Asn Tyr Val Ile Arg Ala Lys Val Lys Glu Val Lys Met
 195 200 205
 Lys Cys His Asp Val Thr Ala Val Val Glu Val Lys Glu Ile Leu Lys

210	215	220	
Ala Ser Leu Val Asn Ile Pro Arg Asp Thr Val Asn Leu Tyr Thr Thr			
225	230	235	240
Ser Gly Cys Leu Cys Pro Pro Leu Thr Val Asn Glu Glu Tyr Val Ile			
	245	250	255
Met Gly Tyr Glu Asp Glu Glu Arg Ser Arg Leu Leu Leu Val Glu Gly			
	260	265	270
Ser Ile Ala Glu Lys Trp Lys Asp Arg Leu Gly Lys Lys Val Lys Arg			
	275	280	285
Trp Asp Met Lys Leu Arg His Leu Gly Leu Gly Lys Thr Asp Ala Ser			
	290	295	300
Asp Ser Thr Gln Asn Gln Lys Ser Gly Arg Asn Ser Asn Pro Arg Pro			
305	310	315	320
Ala Arg Ser			

<210> 734

<211> 738

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (738)

<400> 734

atg acg gcg gct atc gcc agc tcg ctc atc cgg caa aag aga caa gcc	48
Met Thr Ala Ala Ile Ala Ser Ser Leu Ile Arg Gln Lys Arg Gln Ala	
1 5 10 15	
cgc gag cgc gag aaa tcc aat gcc tgc aag tgt gtc agc agc ccc agc	96

Arg	Glu	Arg	Glu	Lys	Ser	Asn	Ala	Cys	Lys	Cys	Val	Ser	Ser	Pro	Ser		
				20				25						30			
aaa	ggc	aag	acc	agc	tgc	gac	aaa	aac	aag	tta	aac	gtc	ttt	tcc	cgg	144	
Lys	Gly	Lys	Thr	Ser	Cys	Asp	Lys	Asn	Lys	Leu	Asn	Val	Phe	Ser	Arg		
			35					40						45			
gtc	aaa	ctc	ttt	ggc	tcc	aag	aag	agg	cgc	aga	agg	aga	cca	gag	cct	192	
Val	Lys	Leu	Phe	Gly	Ser	Lys	Lys	Arg	Arg	Arg	Arg	Arg	Pro	Glu	Pro		
			50					55						60			
cag	ctt	aag	ggt	ata	ggt	acc	aaa	cta	tac	agc	cga	caa	ggc	tac	cac	240	
Gln	Leu	Lys	Gly	Ile	Val	Thr	Lys	Leu	Tyr	Ser	Arg	Gln	Gly	Tyr	His		
			65					70						75		80	
ttg	caa	ctg	cag	gca	gat	gga	acc	att	gat	ggc	acc	aaa	gac	gag	gac	288	
Leu	Gln	Leu	Gln	Ala	Asp	Gly	Thr	Ile	Asp	Gly	Thr	Lys	Asp	Glu	Asp		
				85						90				95			
agc	act	tac	act	ctg	ttt	aac	ctc	atc	cct	gtg	ggt	ctt	cgg	gtg	gtg	336	
Ser	Thr	Tyr	Thr	Leu	Phe	Asn	Leu	Ile	Pro	Val	Gly	Leu	Arg	Val	Val		
				100						105				110			
gct	att	caa	gga	gtt	caa	acc	aag	ctg	tat	ttg	gca	atg	aac	agc	gag	384	
Ala	Ile	Gln	Gly	Val	Gln	Thr	Lys	Leu	Tyr	Leu	Ala	Met	Asn	Ser	Glu		
				115				120						125			
gga	tac	ttg	tac	acc	tcg	gaa	cat	ttc	aca	cct	gag	tgc	aaa	ttc	aaa	432	
Gly	Tyr	Leu	Tyr	Thr	Ser	Glu	His	Phe	Thr	Pro	Glu	Cys	Lys	Phe	Lys		
				130				135						140			
gaa	tca	gtg	ttt	gaa	aat	tat	tac	gtg	aca	tac	tca	tca	atg	atc	tac	480	
Glu	Ser	Val	Phe	Glu	Asn	Tyr	Tyr	Val	Thr	Tyr	Ser	Ser	Met	Ile	Tyr		
				145				150						155		160	
cgt	cag	cag	caa	tcc	ggc	cga	ggg	tgg	tat	cta	ggt	ctg	aac	aaa	gaa	528	
Arg	Gln	Gln	Gln	Ser	Gly	Arg	Gly	Trp	Tyr	Leu	Gly	Leu	Asn	Lys	Glu		
				165						170					175		

gga gag atc atg aaa ggc aac cat gtg aag aag aac aag cct gca gca 576
 Gly Glu Ile Met Lys Gly Asn His Val Lys Lys Asn Lys Pro Ala Ala
 180 185 190
 cat ttt ctg ccc aaa cca ctg aaa gtg gcc atg tac aag gag cca tct 624
 His Phe Leu Pro Lys Pro Leu Lys Val Ala Met Tyr Lys Glu Pro Ser
 195 200 205
 ctg cac gat ctc acg gag ttc tcc cga tct gga agt ggg acc ccg acc 672
 Leu His Asp Leu Thr Glu Phe Ser Arg Ser Gly Ser Gly Thr Pro Thr
 210 215 220
 aag agc aga agc gtc tct ggt gta ctg aat gga ggc aaa tcc atg agc 720
 Lys Ser Arg Ser Val Ser Gly Val Leu Asn Gly Gly Lys Ser Met Ser
 225 230 235 240
 cac aac gaa tca acg tag 738
 His Asn Glu Ser Thr
 245

<210> 735

<211> 245

<212> PRT

<213> Mus musculus

<400> 735

Met Thr Ala Ala Ile Ala Ser Ser Leu Ile Arg Gln Lys Arg Gln Ala
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 Arg Glu Arg Glu Lys Ser Asn Ala Cys Lys Cys Val Ser Ser Pro Ser
 20 25 30
 Lys Gly Lys Thr Ser Cys Asp Lys Asn Lys Leu Asn Val Phe Ser Arg
 35 40 45
 Val Lys Leu Phe Gly Ser Lys Lys Arg Arg Arg Arg Arg Pro Glu Pro

50 55 60
 Gln Leu Lys Gly Ile Val Thr Lys Leu Tyr Ser Arg Gln Gly Tyr His
 65 70 75 80
 Leu Gln Leu Gln Ala Asp Gly Thr Ile Asp Gly Thr Lys Asp Glu Asp
 85 90 95
 Ser Thr Tyr Thr Leu Phe Asn Leu Ile Pro Val Gly Leu Arg Val Val
 100 105 110
 Ala Ile Gln Gly Val Gln Thr Lys Leu Tyr Leu Ala Met Asn Ser Glu
 115 120 125
 Gly Tyr Leu Tyr Thr Ser Glu His Phe Thr Pro Glu Cys Lys Phe Lys
 130 135 140
 Glu Ser Val Phe Glu Asn Tyr Tyr Val Thr Tyr Ser Ser Met Ile Tyr
 145 150 155 160
 Arg Gln Gln Gln Ser Gly Arg Gly Trp Tyr Leu Gly Leu Asn Lys Glu
 165 170 175
 Gly Glu Ile Met Lys Gly Asn His Val Lys Lys Asn Lys Pro Ala Ala
 180 185 190
 His Phe Leu Pro Lys Pro Leu Lys Val Ala Met Tyr Lys Glu Pro Ser
 195 200 205
 Leu His Asp Leu Thr Glu Phe Ser Arg Ser Gly Ser Gly Thr Pro Thr
 210 215 220
 Lys Ser Arg Ser Val Ser Gly Val Leu Asn Gly Gly Lys Ser Met Ser
 225 230 235 240
 His Asn Glu Ser Thr
 245

<210> 736

<211> 1080

<212> DNA

<213> Mus musculus

<400> 736

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aataaacact catgttttaa attcttttct caggtcacgt gtgccaacct aacaaatggt 180
gggaaatcgg aactactgaa gtcagggagc agcaaatcca cgctaaagca catatggaca 240
gaaagcagca aagacttgte tatcagtcgg ctccctctcac agactttccg tggtaaagaa 300
aatgacacag atttggacct gcgctatgac accccagaac ctattctga gcaagacctc 360
tgggactggc tgaggaactc cacagatctt caggagccctc ggcccagggc caaaagacgg 420
cccattgtta aaactggcaa gttaagaaa atgtttggat ggggtgattt tcattccaac 480
atcaaaacag tgaagctaaa cctgttgata actgggaaaa ttgttagatca cggcaatgga 540
accttttagtg tatatttcag gcataactcc actggtaag ggaatgtatc tgtcagcttg 600
gtgcccccaa caaaaatcgt ggaattcgat ttggcacaac aaaccgtgat tgatgctaaa 660
gattccaagt ccttcaactg tcgcatlgag tatgagaagg ttgacaaggc caccaagaac 720
acactctgca actacgacc ttcaaaaacc tgttaccagg agcagacca aagtcacgtg 780
tcctggctct gctctaagcc ctcaagggtg atctgtatit acatttcctt ttatagtaca 840
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aggacagggc tgtcacctta aggaagaagg tcacatctgt tgcctggaat gtgtctacct 1020
tgctgctctt gttgactggt gcacacatgc tagtggaaaa caattgatgt catttctgca 1080

<210> 737

<211> 656

<212> DNA

<213> Mus musculus

<400> 737

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 ttataaactt tctacaggat gtttttaaac aaattcttca catttcacgt tgactatgta 180
 cttacggaac ttcagggaat tagttcigt tttaatagct taatctgtac taatgggatg 240
 gcacgtggc acatgcagtc catgtgggat tctaacataa cattgagtga gttttctgac 300
 gttgaccatc cctttgacgc tgacggtaat gcatctgttg aaagaaggga ctgtagattt 360
 gggttactgc tctctgcatc ttcagtttt tctgtattat cttcccagtt aatgtggaat 420
 ctgtgactc tgggattaga tgccaaaata ttcctttgaa gcttagaaaa gtctggtttt 480
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<212> DNA

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 cagct atg aag tct tac act cca tat ttc atg ctc ctg tgg agt gct gtt 470

Met Lys Ser Tyr Thr Pro Tyr Phe Met Leu Leu Trp Ser Ala Val

1 5 10 15

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Gly Ile Ala Arg Ala Ala Lys Ile Ile Ile Val Pro Pro Ile Met Phe

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gaa agc cat ttg tac att ttc aag aca cta gca tcg gcc ttg cac gag 566
Glu Ser His Leu Tyr Ile Phe Lys Thr Leu Ala Ser Ala Leu His Glu

35 40 45

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Arg Gly His His Thr Val Leu Leu Leu Ser Glu Gly Arg Asp Ile Ala

50 55 60

cca tct aat cac tac agc ctc cag cgg tac cca ggc atc ttc aac agt 662
Pro Ser Asn His Tyr Ser Leu Gln Arg Tyr Pro Gly Ile Phe Asn Ser

65 70 75

acc acc tca gat gct ttc ctg cag tct aaa atg agg aat att ttt tct 710
Thr Thr Ser Asp Ala Phe Leu Gln Ser Lys Met Arg Asn Ile Phe Ser

80 85 90 95

ggg aga ttg aca gca gtt gaa ctg gtt gac ata ctg gat cac tat act 758
Gly Arg Leu Thr Ala Val Glu Leu Val Asp Ile Leu Asp His Tyr Thr

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115 120 125

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Lys Leu Ile Glu Trp Leu Pro Gln Asn Asp Leu Leu Gly His Ser Asn			
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Met Tyr His Gly Val Pro Val Val Gly Ile Pro Leu Phe Gly Asp His			
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Tyr Asp Thr Met Thr Arg Val Gln Ala Lys Gly Met Gly Ile Leu Leu			
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Glu Trp Asn Thr Val Thr Glu Gly Glu Leu Tyr Asp Ala Leu Val Lys			
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gtt atc aat aat ccc agt tat cgg cag agg gct cag aag tta tcg gaa			1718
Val Ile Asn Asn Pro Ser Tyr Arg Gln Arg Ala Gln Lys Leu Ser Glu			
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ata gac tac att ctt cgc cat gac gga gcc cat cac ctc cgt tct gct			1814
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Val His Gln Ile Ser Phe Cys Gln Tyr Phe Leu Leu Asp Ile Ala Phe
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<212> PRT

<213> Mus musculus

<400> 739

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Ser Asn His Tyr Ser Leu Gln Arg Tyr Pro Gly Ile Phe Asn Ser Thr		
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<212> DNA

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<222> (528).. (2186)

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Met His Cys

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Thr Val Ala Leu Cys Ile Ala Ala Tyr Gln Glu Asp Pro Asp Tyr Leu	
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Arg Lys Cys Leu Gln Ser Val Lys Arg Leu Thr Tyr Pro Gly Ile Lys	
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535

540

545

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 Met Val Leu Asp Val

550

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<210> 742

<211> 552

<212> PRT

<213> Mus musculus

<400> 742

Met His Cys Glu Arg Phe Leu Cys Val Leu Arg Ile Ile Gly Thr Thr

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15

Leu Phe Gly Val Ser Leu Leu Leu Gly Ile Thr Ala Ala Tyr Ile Val

20	25	30
Gly Tyr Gln Phe Ile Gln Thr Asp Asn Tyr Tyr Phe Ser Phe Gly Leu		
35	40	45
Tyr Gly Ala Phe Leu Ala Ser His Leu Ile Ile Gln Ser Leu Phe Ala		
50	55	60
Phe Leu Glu His Arg Lys Met Lys Lys Ser Leu Glu Thr Pro Ile Lys		
65	70	75
Leu Asn Lys Thr Val Ala Leu Cys Ile Ala Ala Tyr Gln Glu Asp Pro		
85	90	95
Asp Tyr Leu Arg Lys Cys Leu Gln Ser Val Lys Arg Leu Thr Tyr Pro		
100	105	110
Gly Ile Lys Val Val Met Val Ile Asp Gly Asn Ser Asp Asp Asp Leu		
115	120	125
Tyr Met Met Asp Ile Phe Ser Glu Val Met Gly Arg Asp Lys Ser Ala		
130	135	140
Thr Tyr Ile Trp Lys Asn Asn Phe His Glu Lys Gly Pro Gly Glu Thr		
145	150	155
Glu Glu Ser His Lys Glu Ser Ser Gln His Val Thr Gln Leu Val Leu		
165	170	175
Ser Asn Lys Ser Ile Cys Ile Met Gln Lys Trp Gly Gly Lys Arg Glu		
180	185	190
Val Met Tyr Thr Ala Phe Arg Ala Leu Gly Arg Ser Val Asp Tyr Val		
195	200	205
Gln Val Cys Asp Ser Asp Thr Met Leu Asp Pro Ala Ser Ser Val Glu		
210	215	220
Met Val Lys Val Leu Glu Glu Asp Pro Met Val Gly Gly Val Gly Gly		
225	230	235
Asp Val Gln Ile Leu Asn Lys Tyr Asp Ser Trp Ile Ser Phe Leu Ser		
245	250	255

Ser Val Arg Tyr Trp Met Ala Phe Asn Ile Glu Arg Ala Cys Gln Ser
 260 265 270
 Tyr Phe Gly Cys Val Gln Cys Ile Ser Gly Pro Leu Gly Met Tyr Arg
 275 280 285
 Asn Ser Leu Leu His Glu Phe Val Glu Asp Trp Tyr Asn Gln Glu Phe
 290 295 300
 Met Gly Asn Gln Cys Ser Phe Gly Asp Asp Arg His Leu Thr Asn Arg
 305 310 315 320
 Val Leu Ser Leu Gly Tyr Ala Thr Lys Tyr Thr Ala Arg Ser Lys Cys
 325 330 335
 Leu Thr Glu Thr Pro Ile Glu Tyr Leu Arg Trp Leu Asn Gln Gln Thr
 340 345 350
 Arg Trp Ser Lys Ser Tyr Phe Arg Glu Trp Leu Tyr Asn Ala Met Trp
 355 360 365
 Phe His Lys His His Leu Trp Met Thr Tyr Glu Ala Val Ile Thr Gly
 370 375 380
 Phe Phe Pro Phe Phe Leu Ile Ala Thr Val Ile Gln Leu Phe Tyr Arg
 385 390 395 400
 Gly Lys Ile Trp Asn Ile Leu Leu Phe Leu Leu Thr Val Gln Leu Val
 405 410 415
 Gly Leu Ile Lys Ser Ser Phe Ala Ser Cys Leu Arg Gly Asn Ile Val
 420 425 430
 Met Val Phe Met Ser Leu Tyr Ser Val Leu Tyr Met Ser Ser Leu Leu
 435 440 445
 Pro Ala Lys Met Phe Ala Ile Ala Thr Ile Asn Lys Ala Gly Trp Gly
 450 455 460
 Thr Ser Gly Arg Lys Thr Ile Val Val Asn Phe Ile Gly Leu Ile Pro
 465 470 475 480
 Val Ser Val Trp Phe Thr Ile Leu Leu Gly Gly Val Ile Phe Thr Ile

	485		490		495										
Tyr	Lys	Glu	Ser	Lys	Lys	Pro	Phe	Ser	Glu	Ser	Lys	Gln	Thr	Val	Leu
		500				505						510			
Ile	Val	Gly	Thr	Leu	Ile	Tyr	Ala	Cys	Tyr	Trp	Val	Met	Leu	Leu	Thr
		515				520						525			
Leu	Tyr	Val	Val	Leu	Ile	Asn	Lys	Cys	Gly	Arg	Arg	Lys	Lys	Gly	Gln
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Gln	Tyr	Asp	Met	Val	Leu	Asp	Val								
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<210> 743

<211> 3167

<212> DNA

<213> Mus musculus

<400> 743

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agtatgatgg tcaaacagga aggcattggag ctgaagctgc aggccactca gaaggacctc 300
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gcatctgata aagtggaaaa atgcaaagta gatattgccc agttagaaga agatttgaaa 480
gagaaggata gtgagatttt aagtcittaag cagtcctctg aggaaaacat tacattttct 540
aagcaaatag aagacctgac tgttaaatgc cagctacttg aaacagaaag agacaacctt 600
gtcagcaagg atagagaaag ggctgaaact ctacagtctg agatgcagat cctgacagag 660
aggctggctc tggaaaggca agaatatgaa aagctgcaac aaaaagaatt gcaaagccag 720
tcacttctgc agcaagagaa ggaactgtct gctcgtctgc agcagcagct ctgctctttc 780

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caagagaagt acaatgacac agcacagagt ctgagggacg tcaactgctca gttggaaagt 1200
gagcaagaga agtacaatga cacagcacag agtctgaggg acgtcactgc tcagttggaa 1260
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<210> 744

<211> 1350

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (35).. (1156)

<400> 744

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Met Ala Glu Asn Lys His Pro

1

5

gac aaa cca ctt aag gtg ttg gaa cag ctg ggc aaa gaa gtc ctt acg 103

Asp Lys Pro Leu Lys Val Leu Glu Gln Leu Gly Lys Glu Val Leu Thr

10

15

20

gag tac cta gaa aaa tta gta caa agc aat gta ctg aaa tta aag gag 151

Glu Tyr Leu Glu Lys Leu Val Gln Ser Asn Val Leu Lys Leu Lys Glu
 25 30 35
 gaa gat aaa caa aaa ttt aac aat gct gaa cgc agt gac aag cgt tgg 199
 Glu Asp Lys Gln Lys Phe Asn Asn Ala Glu Arg Ser Asp Lys Arg Trp
 40 45 50 55
 gtt ttt gta gat gcc atg aaa aag aaa cac agc aaa gta ggt gaa atg 247
 Val Phe Val Asp Ala Met Lys Lys Lys His Ser Lys Val Gly Glu Met
 60 65 70
 ctt ctc cag aca ttc ttc agt gtg gac cca ggc agc cac cat ggt gaa 295
 Leu Leu Gln Thr Phe Phe Ser Val Asp Pro Gly Ser His His Gly Glu
 75 80 85
 gct aat ctg gaa atg gag gaa cca gaa gaa tca ttg aac act ctc aag 343
 Ala Asn Leu Glu Met Glu Glu Pro Glu Glu Ser Leu Asn Thr Leu Lys
 90 95 100
 ctt tgt tcc cct gaa gag ttc aca agg ctt tgc aga gaa aag aca caa 391
 Leu Cys Ser Pro Glu Glu Phe Thr Arg Leu Cys Arg Glu Lys Thr Gln
 105 110 115
 gaa att tac cca ata aag gag gcc aat ggc cgt aca cga aag gct ctt 439
 Glu Ile Tyr Pro Ile Lys Glu Ala Asn Gly Arg Thr Arg Lys Ala Leu
 120 125 130 135
 atc ata tgc aat aca gag ttc aaa cat ctc tca ctg agg tat ggg gct 487
 Ile Ile Cys Asn Thr Glu Phe Lys His Leu Ser Leu Arg Tyr Gly Ala
 140 145 150
 aaa ttt gac atc att ggt atg aaa ggc ctt ctt gaa gac tta ggc tac 535
 Lys Phe Asp Ile Ile Gly Met Lys Gly Leu Leu Glu Asp Leu Gly Tyr
 155 160 165
 gat gtg gtg gtg aaa gag gag ctt aca gca gag ggc atg gag tca gag 583
 Asp Val Val Val Lys Glu Glu Leu Thr Ala Glu Gly Met Glu Ser Glu
 170 175 180


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atg aaa gac ttt gct gca ctc tca gaa cac cag aca tca gac agc aca 631
Met Lys Asp Phe Ala Ala Leu Ser Glu His Gln Thr Ser Asp Ser Thr
      185              190              195

ttc ctg gtg cta atg tct cat ggc aca ctg cat ggc att tgt gga aca 679
Phe Leu Val Leu Met Ser His Gly Thr Leu His Gly Ile Cys Gly Thr
200              205              210              215

atg cac agt gaa aaa act cca gat gtg cta cag tat gat acc atc tat 727
Met His Ser Glu Lys Thr Pro Asp Val Leu Gln Tyr Asp Thr Ile Tyr
              220              225              230

cag ata ttc aac aat tgc cac tgt cca ggt cta cga gac aaa ccc aaa 775
Gln Ile Phe Asn Asn Cys His Cys Pro Gly Leu Arg Asp Lys Pro Lys
              235              240              245

gtc atc att gtg cag gcc tgc aga ggt ggg aac tct gga gaa atg tgg 823
Val Ile Ile Val Gln Ala Cys Arg Gly Gly Asn Ser Gly Glu Met Trp
              250              255              260

atc aga gag tct tca aaa ccc cag ttg tgc aga ggt gta gat cta cct 871
Ile Arg Glu Ser Ser Lys Pro Gln Leu Cys Arg Gly Val Asp Leu Pro
              265              270              275

agg aat atg gaa gct gat gct gtc aag ctg agc cac gtg gag aag gac 919
Arg Asn Met Glu Ala Asp Ala Val Lys Leu Ser His Val Glu Lys Asp
280              285              290              295

ttc att gcc ttc tac tct aca acc cca cat cac ttg tcc tac cga gac 967
Phe Ile Ala Phe Tyr Ser Thr Thr Pro His His Leu Ser Tyr Arg Asp
              300              305              310

aaa aca gga ggc tct tac ttc atc act aga ctc att tcc tgc ttc cgg 1015
Lys Thr Gly Gly Ser Tyr Phe Ile Thr Arg Leu Ile Ser Cys Phe Arg
              315              320              325

aaa cat gct tgc tct tgt cat ctc ttt gat ata ttc ctg aag gtg caa 1063
Lys His Ala Cys Ser Cys His Leu Phe Asp Ile Phe Leu Lys Val Gln

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330 335 340
 caa tca ttt gaa aag gca agt att cat tcc cag atg ccc acc att gat 1111
 Gln Ser Phe Glu Lys Ala Ser Ile His Ser Gln Met Pro Thr Ile Asp
 345 350 355
 cgg gca acc ttg aca aga tat ttc tac ctc ttt cct ggc aac tga 1156
 Arg Ala Thr Leu Thr Arg Tyr Phe Tyr Leu Phe Pro Gly Asn
 360 365 370
 gaacaaagca acaagcaact gaatctcatt tcttcagctt gaagaagtgat tcttggccaa 1216
 ggatcacatt ctattcctga aattccagaa ctatgigaaat taaggaaaga atacttatga 1276
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 aaataaaaaa aaaa 1350

<210> 745

<211> 373

<212> PRT

<213> Mus musculus

<400> 745

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 Leu Gly Lys Glu Val Leu Thr Glu Tyr Leu Glu Lys Leu Val Gln Ser
 20 25 30
 Asn Val Leu Lys Leu Lys Glu Glu Asp Lys Gln Lys Phe Asn Asn Ala
 35 40 45
 Glu Arg Ser Asp Lys Arg Trp Val Phe Val Asp Ala Met Lys Lys Lys
 50 55 60
 His Ser Lys Val Gly Glu Met Leu Leu Gln Thr Phe Phe Ser Val Asp
 65 70 75 80
 Pro Gly Ser His His Gly Glu Ala Asn Leu Glu Met Glu Glu Pro Glu

	85		90		95
Glu Ser Leu Asn Thr Leu Lys Leu Cys Ser Pro Glu Glu Phe Thr Arg					
	100		105		110
Leu Cys Arg Glu Lys Thr Gln Glu Ile Tyr Pro Ile Lys Glu Ala Asn					
	115		120		125
Gly Arg Thr Arg Lys Ala Leu Ile Ile Cys Asn Thr Glu Phe Lys His					
	130		135		140
Leu Ser Leu Arg Tyr Gly Ala Lys Phe Asp Ile Ile Gly Met Lys Gly					
145		150		155	160
Leu Leu Glu Asp Leu Gly Tyr Asp Val Val Val Lys Glu Glu Leu Thr					
	165		170		175
Ala Glu Gly Met Glu Ser Glu Met Lys Asp Phe Ala Ala Leu Ser Glu					
	180		185		190
His Gln Thr Ser Asp Ser Thr Phe Leu Val Leu Met Ser His Gly Thr					
	195		200		205
Leu His Gly Ile Cys Gly Thr Met His Ser Glu Lys Thr Pro Asp Val					
	210		215		220
Leu Gln Tyr Asp Thr Ile Tyr Gln Ile Phe Asn Asn Cys His Cys Pro					
225		230		235	240
Gly Leu Arg Asp Lys Pro Lys Val Ile Ile Val Gln Ala Cys Arg Gly					
	245		250		255
Gly Asn Ser Gly Glu Met Trp Ile Arg Glu Ser Ser Lys Pro Gln Leu					
	260		265		270
Cys Arg Gly Val Asp Leu Pro Arg Asn Met Glu Ala Asp Ala Val Lys					
	275		280		285
Leu Ser His Val Glu Lys Asp Phe Ile Ala Phe Tyr Ser Thr Thr Pro					
	290		295		300
His His Leu Ser Tyr Arg Asp Lys Thr Gly Gly Ser Tyr Phe Ile Thr					
305		310		315	320

Arg Leu Ile Ser Cys Phe Arg Lys His Ala Cys Ser Cys His Leu Phe
 325 330 335
 Asp Ile Phe Leu Lys Val Gln Gln Ser Phe Glu Lys Ala Ser Ile His
 340 345 350
 Ser Gln Met Pro Thr Ile Asp Arg Ala Thr Leu Thr Arg Tyr Phe Tyr
 355 360 365
 Leu Phe Pro Gly Asn
 370

<210> 746

<211> 598

<212> DNA

<213> Mus musculus

<400> 746

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 ccatcactgg actgggcagg aatatttgag tggctctgcg ctaaggcaag ggttgggctt 180
 cagcttagcc cagggtgggtt cgagtgccat ttggccctgg acatgccatt cccagggtga 240
 gaatttccaa ctccggagggt gagcaagccc aggggaatcg ctatggcaaa ttgtcattgg 300
 ccttatgacc catgtctctg agtgcctcgc tcacactcgc atctgagtgg gtcgtttcct 360
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 agaatcggct accatccgcg cacacagggg tcccgcttgc ccgtagatca atggggcgat 480
 tttctgggag gatgggtgtg gggaacaggc gcacagtcac aggtggtgat gatgaacaag 540
 gctagaggga gaaatcgcg ggtgaagtgt gaacagtatt gggcagtcg ggggcact 598

<210> 747

<211> 548

<212> DNA

<213> Mus musculus

<400> 747

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gaattttaaa tgatctcttc aatttctcca tatacaggca aaactacgtg tgccatttat 120
cttactggag ctigccaact atciagagaa ggacacttta tccccaacct gctttaacca 180
ggaggccagt tcatctgccg acccccaagg acatggaggt gaatgtgata gacagactgt 240
ccccgctctg cacccttcatt caccaccaic cggtaaccgc gcttcaggcc cagatctgca 300
gcacatttct tgccaacaat cattaaatgt cctagaagac ttctatcaic atcatctgct 360
acagaaatct gggatataatg ctctctgggt atcaccagaa agtgigtgtg tgcttgaggg 420
gaaatgtcat gaaaagcaag acaccggctg tctcgaaga tgatcttggc ggggatttcg 480
ttgcggatga tcttgccgaa gatcgtgtcg ccgccgggct gggccacttg aaccttgca 540
atctcgic                                     548

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<210> 748

<211> 990

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (990)

<400> 748

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Met Trp Gly Leu Lys Val Leu Leu Leu Pro Met Val Ser Phe Ala Leu
      1             5             10             15
tct ccg gag gaa atg ctg gac acc cag tgg gag cta tgg aag aag act   96
Ser Pro Glu Glu Met Leu Asp Thr Gln Trp Glu Leu Trp Lys Lys Thr

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20	25	30	
cac cag aag cag tat aac agc aag gtg gat gaa atc tct cgg cgt tta	144		
His Gln Lys Gln Tyr Asn Ser Lys Val Asp Glu Ile Ser Arg Arg Leu			
35	40	45	
att tgg gag aaa aac ctg aag caa atc tct gcc cat aac ctg gag gcc	192		
Ile Trp Glu Lys Asn Leu Lys Gln Ile Ser Ala His Asn Leu Glu Ala			
50	55	60	
tct ctt ggt gtc cat aca tat gaa ctg gcc atg aac cac tlg gga gac	240		
Ser Leu Gly Val His Thr Tyr Glu Leu Ala Met Asn His Leu Gly Asp			
65	70	75	80
atg acc agt gaa gaa gtg gtt cag aag atg acg gga ctc aga ata cct	288		
Met Thr Ser Glu Glu Val Val Gln Lys Met Thr Gly Leu Arg Ile Pro			
85	90	95	
ccc tct cga tcc tac agt aat gac act ctc tat acc cca gag tgg gaa	336		
Pro Ser Arg Ser Tyr Ser Asn Asp Thr Leu Tyr Thr Pro Glu Trp Glu			
100	105	110	
ggc agg gtc cca gac tcc atc gac tat cga aag aaa gga tac gtt act	384		
Gly Arg Val Pro Asp Ser Ile Asp Tyr Arg Lys Lys Gly Tyr Val Thr			
115	120	125	
cca gtg aag aac cag ggc cag tgt ggt tcc tgt tgg gct ttc agc tct	432		
Pro Val Lys Asn Gln Gly Gln Cys Gly Ser Cys Trp Ala Phe Ser Ser			
130	135	140	
gcc ggg gcc ctg gag ggc caa ctc aag aag aaa act ggt aaa ctc cta	480		
Ala Gly Ala Leu Glu Gly Gln Leu Lys Lys Lys Thr Gly Lys Leu Leu			
145	150	155	160
gct ctg agt ccc cag aat ctt gtg gac tgt gtg act gag aat tat ggc	528		
Ala Leu Ser Pro Gln Asn Leu Val Asp Cys Val Thr Glu Asn Tyr Gly			
165	170	175	
tgt gga ggc ggc tat atg acc act gct ttc caa tac gtg cag cag aac	576		

Cys Gly Gly Gly Tyr Met Thr Thr Ala Phe Gln Tyr Val Gln Gln Asn
 180 185 190
 gga ggc atc gac tct gaa gat gct ttc cca tat gtg ggc cag gat gaa 624
 Gly Gly Ile Asp Ser Glu Asp Ala Phe Pro Tyr Val Gly Gln Asp Glu
 195 200 205
 agt tgt atg tat aac gcc acg gca aag gca gct aaa tgc aga ggg tac 672
 Ser Cys Met Tyr Asn Ala Thr Ala Lys Ala Ala Lys Cys Arg Gly Tyr
 210 215 220
 aga gag att cct gtg ggg aac gag aaa gcc ctg aag aga gca gtg gcg 720
 Arg Glu Ile Pro Val Gly Asn Glu Lys Ala Leu Lys Arg Ala Val Ala
 225 230 235 240
 cgg gta gga ccc atc tct gtg tcc atc gac gca agc ttg gca tct ttc 768
 Arg Val Gly Pro Ile Ser Val Ser Ile Asp Ala Ser Leu Ala Ser Phe
 245 250 255
 cag ttt tac agc aga ggt gtg tac tat gat gaa aat tgt gac cgt gat 816
 Gln Phe Tyr Ser Arg Gly Val Tyr Tyr Asp Glu Asn Cys Asp Arg Asp
 260 265 270
 aat gtg aac cat gca gtg ttg gtg gtg ggc tat ggc acc cag aag gga 864
 Asn Val Asn His Ala Val Leu Val Val Gly Tyr Gly Thr Gln Lys Gly
 275 280 285
 agc aag cac tgg ata att aaa aac agc tgg gga gag agc tgg gga aac 912
 Ser Lys His Trp Ile Ile Lys Asn Ser Trp Gly Glu Ser Trp Gly Asn
 290 295 300
 aaa gga tat gct ctc ttg gct cgg aat aag aac aac gcc tgc ggc att 960
 Lys Gly Tyr Ala Leu Leu Ala Arg Asn Lys Asn Asn Ala Cys Gly Ile
 305 310 315 320
 acc aac atg gcc agc ttc ccc aag atg tga 990
 Thr Asn Met Ala Ser Phe Pro Lys Met
 325 330

<210> 749

<211> 329

<212> PRT

<213> Mus musculus

<400> 749

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 Ser Pro Glu Glu Met Leu Asp Thr Gln Trp Glu Leu Trp Lys Lys Thr
 20 25 30
 His Gln Lys Gln Tyr Asn Ser Lys Val Asp Glu Ile Ser Arg Arg Leu
 35 40 45
 Ile Trp Glu Lys Asn Leu Lys Gln Ile Ser Ala His Asn Leu Glu Ala
 50 55 60
 Ser Leu Gly Val His Thr Tyr Glu Leu Ala Met Asn His Leu Gly Asp
 65 70 75 80
 Met Thr Ser Glu Glu Val Val Gln Lys Met Thr Gly Leu Arg Ile Pro
 85 90 95
 Pro Ser Arg Ser Tyr Ser Asn Asp Thr Leu Tyr Thr Pro Glu Trp Glu
 100 105 110
 Gly Arg Val Pro Asp Ser Ile Asp Tyr Arg Lys Lys Gly Tyr Val Thr
 115 120 125
 Pro Val Lys Asn Gln Gly Gln Cys Gly Ser Cys Trp Ala Phe Ser Ser
 130 135 140
 Ala Gly Ala Leu Glu Gly Gln Leu Lys Lys Lys Thr Gly Lys Leu Leu
 145 150 155 160
 Ala Leu Ser Pro Gln Asn Leu Val Asp Cys Val Thr Glu Asn Tyr Gly
 165 170 175

Cys Gly Gly Gly Tyr Met Thr Thr Ala Phe Gln Tyr Val Gln Gln Asn
 180 185 190
 Gly Gly Ile Asp Ser Glu Asp Ala Phe Pro Tyr Val Gly Gln Asp Glu
 195 200 205
 Ser Cys Met Tyr Asn Ala Thr Ala Lys Ala Ala Lys Cys Arg Gly Tyr
 210 215 220
 Arg Glu Ile Pro Val Gly Asn Glu Lys Ala Leu Lys Arg Ala Val Ala
 225 230 235 240
 Arg Val Gly Pro Ile Ser Val Ser Ile Asp Ala Ser Leu Ala Ser Phe
 245 250 255
 Gln Phe Tyr Ser Arg Gly Val Tyr Tyr Asp Glu Asn Cys Asp Arg Asp
 260 265 270
 Asn Val Asn His Ala Val Leu Val Val Gly Tyr Gly Thr Gln Lys Gly
 275 280 285
 Ser Lys His Trp Ile Ile Lys Asn Ser Trp Gly Glu Ser Trp Gly Asn
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<210> 750

<211> 124

<212> DNA

<213> Mus musculus

<400> 750

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124

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<211> 1814

<212> DNA

<213> *Mus musculus*

<400> 751

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<210> 752

<211> 1185

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (1011)

<400> 752

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 ttg gcg gtg atg act ctg gtg gct gcc gct tac acc gla gct tta aga 96
 Leu Ala Val Met Thr Leu Val Ala Ala Ala Tyr Thr Val Ala Leu Arg
 20 25 30
 tac aca agg aca aca gct gaa gaa ctc tac ttc tca acc act gcc gtg 144
 Tyr Thr Arg Thr Thr Ala Glu Glu Leu Tyr Phe Ser Thr Thr Ala Val

35	40	45	
tgt atc aca gaa gtg ata aag tta ctg ata agt gtt ggc ctg tta gct	192		
Cys Ile Thr Glu Val Ile Lys Leu Leu Ile Ser Val Gly Leu Leu Ala			
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aag gaa act ggc agt ttg ggt aga ttt aaa gcc tca tta agt gaa aat	240		
Lys Glu Thr Gly Ser Leu Gly Arg Phe Lys Ala Ser Leu Ser Glu Asn			
65	70	75	80
gtc ttg ggg agc ccc aag gaa ctg gcg aag ttg agt gtg cca tca cta	288		
Val Leu Gly Ser Pro Lys Glu Leu Ala Lys Leu Ser Val Pro Ser Leu			
85	90	95	
gtg tat gct gtg cag aac aac atg gcc ttc ctg gct ctc agt aat ctg	336		
Val Tyr Ala Val Gln Asn Asn Met Ala Phe Leu Ala Leu Ser Asn Leu			
100	105	110	
gat gca gca gtg tac cag gtg acc tat caa ctg aag atc ccc tgc act	384		
Asp Ala Ala Val Tyr Gln Val Thr Tyr Gln Leu Lys Ile Pro Cys Thr			
115	120	125	
gct tta tgt act gtt tta atg tta aat cga aca ctc agc aaa tta cag	432		
Ala Leu Cys Thr Val Leu Met Leu Asn Arg Thr Leu Ser Lys Leu Gln			
130	135	140	
tgg att tcc gtc ttc atg ctg tgt ggt ggg gtc aca ctc gta cag tgg	480		
Trp Ile Ser Val Phe Met Leu Cys Gly Gly Val Thr Leu Val Gln Trp			
145	150	155	160
aaa cca gcc caa gct tca aaa gtc gtg gta gcg cag aat cca ttg tta	528		
Lys Pro Ala Gln Ala Ser Lys Val Val Val Ala Gln Asn Pro Leu Leu			
165	170	175	
ggc ttt ggt gct ata gct att gct gta ttg tgc tct gga ttt gca gga	576		
Gly Phe Gly Ala Ile Ala Ile Ala Val Leu Cys Ser Gly Phe Ala Gly			
180	185	190	
gtt tat ttt gaa aaa gtc tta aag agt tcc gac act tcc ctt tgg gtg	624		

Val Tyr Phe Glu Lys Val Leu Lys Ser Ser Asp Thr Ser Leu Trp Val
 195 200 205
 aga aac att cag atg tat ctg tca ggg atc gtt gtg acg tta gct ggt 672
 Arg Asn Ile Gln Met Tyr Leu Ser Gly Ile Val Val Thr Leu Ala Gly
 210 215 220
 acc tac ttg tca gat gga gct gaa att caa gaa aaa gga ttc ttc tat 720
 Thr Tyr Leu Ser Asp Gly Ala Glu Ile Gln Glu Lys Gly Phe Phe Tyr
 225 230 235 240
 ggc tac acg tat tat gtc tgg ttt gtt atc ttc ctt gct agt gtg gga 768
 Gly Tyr Thr Tyr Tyr Val Trp Phe Val Ile Phe Leu Ala Ser Val Gly
 245 250 255
 ggc ctc tac acg tca gtg gtg gtg aag tat aca gac aac atc atg aaa 816
 Gly Leu Tyr Thr Ser Val Val Val Lys Tyr Thr Asp Asn Ile Met Lys
 260 265 270
 ggc ttc tct gct gcc gca gcc att gtt ctt tct acc att gct tca gtc 864
 Gly Phe Ser Ala Ala Ala Ala Ile Val Leu Ser Thr Ile Ala Ser Val
 275 280 285
 cta ctg ttt gga tta cag ata aca ctt tca ttt gca ctg gga gct ctt 912
 Leu Leu Phe Gly Leu Gln Ile Thr Leu Ser Phe Ala Leu Gly Ala Leu
 290 295 300
 ctt gig tgt gtt tcc ata tat ctc tat ggg tta ccc aga caa gat act 960
 Leu Val Cys Val Ser Ile Tyr Leu Tyr Gly Leu Pro Arg Gln Asp Thr
 305 310 315 320
 aca tcc att caa caa gaa gca act tca aaa gag aga atc att ggt gtg 1008
 Thr Ser Ile Gln Gln Glu Ala Thr Ser Lys Glu Arg Ile Ile Gly Val
 325 330 335
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1185

<210> 753

<211> 336

<212> PRT

<213> Mus musculus

<400> 753

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Tyr Thr Arg Thr Thr Ala Glu Glu Leu Tyr Phe Ser Thr Thr Ala Val

35 40 45

Cys Ile Thr Glu Val Ile Lys Leu Leu Ile Ser Val Gly Leu Leu Ala

50 55 60

Lys Glu Thr Gly Ser Leu Gly Arg Phe Lys Ala Ser Leu Ser Glu Asn

65 70 75 80

Val Leu Gly Ser Pro Lys Glu Leu Ala Lys Leu Ser Val Pro Ser Leu

85 90 95

Val Tyr Ala Val Gln Asn Asn Met Ala Phe Leu Ala Leu Ser Asn Leu

100 105 110

Asp Ala Ala Val Tyr Gln Val Thr Tyr Gln Leu Lys Ile Pro Cys Thr

115 120 125

Ala Leu Cys Thr Val Leu Met Leu Asn Arg Thr Leu Ser Lys Leu Gln

130 135 140

Trp Ile Ser Val Phe Met Leu Cys Gly Gly Val Thr Leu Val Gln Trp

145 150 155 160

Lys Pro Ala Gln Ala Ser Lys Val Val Val Ala Gln Asn Pro Leu Leu

	165		170		175
Gly Phe Gly Ala Ile Ala Ile Ala Val Leu Cys Ser Gly Phe Ala Gly					
	180		185		190
Val Tyr Phe Glu Lys Val Leu Lys Ser Ser Asp Thr Ser Leu Trp Val					
	195		200		205
Arg Asn Ile Gln Met Tyr Leu Ser Gly Ile Val Val Thr Leu Ala Gly					
	210		215		220
Thr Tyr Leu Ser Asp Gly Ala Glu Ile Gln Glu Lys Gly Phe Phe Tyr					
225		230		235	240
Gly Tyr Thr Tyr Tyr Val Trp Phe Val Ile Phe Leu Ala Ser Val Gly					
	245		250		255
Gly Leu Tyr Thr Ser Val Val Val Lys Tyr Thr Asp Asn Ile Met Lys					
	260		265		270
Gly Phe Ser Ala Ala Ala Ala Ile Val Leu Ser Thr Ile Ala Ser Val					
	275		280		285
Leu Leu Phe Gly Leu Gln Ile Thr Leu Ser Phe Ala Leu Gly Ala Leu					
	290		295		300
Leu Val Cys Val Ser Ile Tyr Leu Tyr Gly Leu Pro Arg Gln Asp Thr					
305		310		315	320
Thr Ser Ile Gln Gln Glu Ala Thr Ser Lys Glu Arg Ile Ile Gly Val					
	325		330		335

<210> 754

<211> 299

<212> DNA

<213> Mus musculus

<400> 754

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 atggacacat ttggctcctgg ggatgatgat gaaatcgtgt ttgatgatat tggagaggat 180
 gatgaagaca ttgatgacat ctaacataaa ctaagcatgc tacattccaa gtctctctgaa 240
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<210> 755

<211> 865

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (64).. (639)

<400> 755

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 Met Gly Lys Lys Thr Lys Arg Thr Ala Asp Ser Ser Ser Ser Glu
 1 5 10 15
 gat gag gag gaa tat gtg gtg gaa aag gtg ttg gac agg cgc atg gtt 156
 Asp Glu Glu Glu Tyr Val Val Glu Lys Val Leu Asp Arg Arg Met Val
 20 25 30
 aag ggg caa gtg gaa tat ctg ttg aag tgg aaa ggc ttt tct gag gag 204
 Lys Gly Gln Val Glu Tyr Leu Leu Lys Trp Lys Gly Phe Ser Glu Glu
 35 40 45
 cac aat act tgg gaa cct gag aag aac ttg gat tgt cct gaa cta att 252
 His Asn Thr Trp Glu Pro Glu Lys Asn Leu Asp Cys Pro Glu Leu Ile
 50 55 60
 tct gag ttt atg aaa aag tat aag aag atg aag gag ggt gaa aac aat 300

Ser Glu Phe Met Lys Lys Tyr Lys Lys Met Lys Glu Gly Glu Asn Asn
 65 70 75
 aag ccc agg gag aaa tca gaa gga aac aag agg aaa tcc agt ttc tcc 348
 Lys Pro Arg Glu Lys Ser Glu Gly Asn Lys Arg Lys Ser Ser Phe Ser
 80 85 90 95
 aac agc gct gat gat att aaa tct aaa aaa aag aga gag caa agc aat 396
 Asn Ser Ala Asp Asp Ile Lys Ser Lys Lys Lys Arg Glu Gln Ser Asn
 100 105 110
 gat atc gct cgg ggc ttt gag aga gga ctg gaa cca gaa aag atc atc 444
 Asp Ile Ala Arg Gly Phe Glu Arg Gly Leu Glu Pro Glu Lys Ile Ile
 115 120 125
 gga gca aca gat tcc tgc ggt gac tta atg ttc tta atg aaa tgg aaa 492
 Gly Ala Thr Asp Ser Cys Gly Asp Leu Met Phe Leu Met Lys Trp Lys
 130 135 140
 gac aca gat gaa gct gac ctg gtt ctt gca aaa gaa gct aac gtg aag 540
 Asp Thr Asp Glu Ala Asp Leu Val Leu Ala Lys Glu Ala Asn Val Lys
 145 150 155
 tgt cca cag att gtg ata gca ttt tat gaa gag aga ctg acg tgg cac 588
 Cys Pro Gln Ile Val Ile Ala Phe Tyr Glu Glu Arg Leu Thr Trp His
 160 165 170 175
 gca tat cca gag gat gcg gaa aac aaa gaa aaa gaa agc gcg aag agc 636
 Ala Tyr Pro Glu Asp Ala Glu Asn Lys Glu Lys Glu Ser Ala Lys Ser
 180 185 190
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<210> 756

<211> 191

<212> PRT

<213> Mus musculus

<400> 756

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          35             40             45
Asn Thr Trp Glu Pro Glu Lys Asn Leu Asp Cys Pro Glu Leu Ile Ser
          50             55             60
Glu Phe Met Lys Lys Tyr Lys Lys Met Lys Glu Gly Glu Asn Asn Lys
          65             70             75             80
Pro Arg Glu Lys Ser Glu Gly Asn Lys Arg Lys Ser Ser Phe Ser Asn
          85             90             95
Ser Ala Asp Asp Ile Lys Ser Lys Lys Lys Arg Glu Gln Ser Asn Asp
          100            105            110
Ile Ala Arg Gly Phe Glu Arg Gly Leu Glu Pro Glu Lys Ile Ile Gly
          115            120            125
Ala Thr Asp Ser Cys Gly Asp Leu Met Phe Leu Met Lys Trp Lys Asp
          130            135            140
Thr Asp Glu Ala Asp Leu Val Leu Ala Lys Glu Ala Asn Val Lys Cys
          145            150            155            160
Pro Gln Ile Val Ile Ala Phe Tyr Glu Glu Arg Leu Thr Trp His Ala
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Tyr Pro Glu Asp Ala Glu Asn Lys Glu Lys Glu Ser Ala Lys Ser
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<210> 757

<211> 394

<212> DNA

<213> *Mus musculus*

<400> 757

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aacatcaatg gccggaacaa gacgggttgg aggc 394
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<210> 758

<211> 2348

<212> DNA

<213> *Mus musculus*

<400> 758

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caccaaggcc cacacggcca gcactggta gcagatgtgt ctccattagg ggtgggcagg 480
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<210> 759

<211> 3746

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (126).. (2558)

<400> 759

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 aaagg atg agt tct gaa cgt cga aaa gaa aag tct aga gat gca gca aga 170

Met Ser Ser Glu Arg Arg Lys Glu Lys Ser Arg Asp Ala Ala Arg

1 5 10 15

tct cgg cga agc aaa gag tct gaa gtt ttt tat gag ctt gct cat cag 218

Ser Arg Arg Ser Lys Glu Ser Glu Val Phe Tyr Glu Leu Ala His Gln

20 25 30

ttg cca ctt ccc cac aat gtg agc tca cat ctt gat aaa gct tct gtt 266

Leu Pro Leu Pro His Asn Val Ser Ser His Leu Asp Lys Ala Ser Val

35 40 45

atg agg ctc acc atc agt tat tta cgt gtg aga aaa ctt ctg gat gcc 314

Met Arg Leu Thr Ile Ser Tyr Leu Arg Val Arg Lys Leu Leu Asp Ala

50 55 60

ggt ggt cta gac agt gaa gat gag atg aag gca cag atg gac tgt ttt 362

Gly Gly Leu Asp Ser Glu Asp Glu Met Lys Ala Gln Met Asp Cys Phe
 65 70 75
 tat ctg aaa gcc cta gat ggc ttt gtg atg gtg cta aca gat gac ggc 410
 Tyr Leu Lys Ala Leu Asp Gly Phe Val Met Val Leu Thr Asp Asp Gly
 80 85 90 95
 gac atg gtt tac att tct gat aac gtg aac aaa tac atg ggg tta act 458
 Asp Met Val Tyr Ile Ser Asp Asn Val Asn Lys Tyr Met Gly Leu Thr
 100 105 110
 cag ttt gaa cta gct gga cac agt gtg ttt gat ttt act cat cca tgt 506
 Gln Phe Glu Leu Ala Gly His Ser Val Phe Asp Phe Thr His Pro Cys
 115 120 125
 gac cat gag gaa atg aga gaa atg ctt aca cac aga aat ggc cca gtg 554
 Asp His Glu Glu Met Arg Glu Met Leu Thr His Arg Asn Gly Pro Val
 130 135 140
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 Arg Lys Gly Lys Glu Leu Asn Thr Gln Arg Ser Phe Phe Leu Arg Met
 145 150 155
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 Lys Cys Thr Leu Thr Ser Arg Gly Arg Thr Met Asn Ile Lys Ser Ala
 160 165 170 175
 acg tgg aag gtg ctt cac tgc acg ggc cat att cat gtc tat gat acc 698
 Thr Trp Lys Val Leu His Cys Thr Gly His Ile His Val Tyr Asp Thr
 180 185 190
 aac agt aac caa cct cag tgt ggg tac aag aaa cca ccc atg acg tgc 746
 Asn Ser Asn Gln Pro Gln Cys Gly Tyr Lys Lys Pro Pro Met Thr Cys
 195 200 205
 ttg gtg ctg att tgt gaa ccc att cct cat ccg tca aat att gaa att 794
 Leu Val Leu Ile Cys Glu Pro Ile Pro His Pro Ser Asn Ile Glu Ile
 210 215 220

cct tta gat agc aag aca ttt ctc agt cga cac agc ctc gat atg aaa 842
 Pro Leu Asp Ser Lys Thr Phe Leu Ser Arg His Ser Leu Asp Met Lys
 225 230 235
 ttt tct tac tgt gat gaa aga att act gag ttg atg ggt tat gag ccg 890
 Phe Ser Tyr Cys Asp Glu Arg Ile Thr Glu Leu Met Gly Tyr Glu Pro
 240 245 250 255
 gaa gaa ctt ttg ggc cgc tca att tat gaa tat tat cat gct ttg gat 938
 Glu Glu Leu Leu Gly Arg Ser Ile Tyr Glu Tyr Tyr His Ala Leu Asp
 260 265 270
 tct gat cat ctg acc aaa act cac cat gat atg ttt act aaa gga caa 986
 Ser Asp His Leu Thr Lys Thr His His Asp Met Phe Thr Lys Gly Gln
 275 280 285
 gtc acc aca gga cag tac agg atg ctt gcc aaa aga ggt gga tat gtc 1034
 Val Thr Thr Gly Gln Tyr Arg Met Leu Ala Lys Arg Gly Gly Tyr Val
 290 295 300
 tgg gtt gaa act caa gca act gtc ata tat aat acg aag aac tcc cag 1082
 Trp Val Glu Thr Gln Ala Thr Val Ile Tyr Asn Thr Lys Asn Ser Gln
 305 310 315
 cca cag tgc att gtg tgt gtg aat tat gtt gta agt ggt att att cag 1130
 Pro Gln Cys Ile Val Cys Val Asn Tyr Val Val Ser Gly Ile Ile Gln
 320 325 330 335
 cac gac ttg att ttc tcc ctt caa caa aca gaa tct gtg ctc aaa cca 1178
 His Asp Leu Ile Phe Ser Leu Gln Gln Thr Glu Ser Val Leu Lys Pro
 340 345 350
 gtt gaa tct tca gat atg aag atg act cag ctg ttc acc aaa gtt gaa 1226
 Val Glu Ser Ser Asp Met Lys Met Thr Gln Leu Phe Thr Lys Val Glu
 355 360 365
 tca gag gat aca agc tgc ctt ttt gat aag ctt aag aag gag cct gat 1274
 Ser Glu Asp Thr Ser Cys Leu Phe Asp Lys Leu Lys Lys Glu Pro Asp

370	375	380	
gct ctc act ctg ctg gct cca gct gcc ggc gac acc atc atc tct ctg			1322
Ala Leu Thr Leu Leu Ala Pro Ala Ala Gly Asp Thr Ile Ile Ser Leu			
385	390	395	
gat ttt ggc agc gat gac aca gaa act gaa gat caa caa ctt gaa gat			1370
Asp Phe Gly Ser Asp Asp Thr Glu Thr Glu Asp Gln Gln Leu Glu Asp			
400	405	410	415
gtt cca tta tat aat gat gta atg ttt ccc tct tct aat gaa aaa tta			1418
Val Pro Leu Tyr Asn Asp Val Met Phe Pro Ser Ser Asn Glu Lys Leu			
420	425	430	
aat ata aac ctg gca atg tct cct tta cct tca tgc gaa act cca aag			1466
Asn Ile Asn Leu Ala Met Ser Pro Leu Pro Ser Ser Glu Thr Pro Lys			
435	440	445	
cca ctt cga agt agc gct gat cct gca ctg aat caa gag gtt gca tta			1514
Pro Leu Arg Ser Ser Ala Asp Pro Ala Leu Asn Gln Glu Val Ala Leu			
450	455	460	
aaa tta gaa tca agt cca gag tca ctg gga ctt tct ttt acc atg ccc			1562
Lys Leu Glu Ser Ser Pro Glu Ser Leu Gly Leu Ser Phe Thr Met Pro			
465	470	475	
cag att caa gat cag cca gca agt cct tct gat gga agc act aga caa			1610
Gln Ile Gln Asp Gln Pro Ala Ser Pro Ser Asp Gly Ser Thr Arg Gln			
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agt tca cct gag cct aac agt ccc agt gaa tat tgc ttt gat gtg gat			1658
Ser Ser Pro Glu Pro Asn Ser Pro Ser Glu Tyr Cys Phe Asp Val Asp			
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agc gat atg gtc aat gta ttc aag ttg gaa ctg gtg gaa aaa ctg ttt			1706
Ser Asp Met Val Asn Val Phe Lys Leu Glu Leu Val Glu Lys Leu Phe			
515	520	525	
gct gaa gac aca gag gca aag aat cca ttt tca act cag gac act gat			1754

Ala Glu Asp Thr Glu Ala Lys Asn Pro Phe Ser Thr Gln Asp Thr Asp	
530	535
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tta gat ttg gag atg ctg gct ccc tat atc cca atg gat gat gat ttc	1802
Leu Asp Leu Glu Met Leu Ala Pro Tyr Ile Pro Met Asp Asp Asp Phe	
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cag tta cgt tcc ttt gat cag ttg tca cca tta gag agc aat tct cca	1850
Gln Leu Arg Ser Phe Asp Gln Leu Ser Pro Leu Glu Ser Asn Ser Pro	
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570	575
agc cct cca agt atg agc aca gtt act ggg ttc cag cag acc cag tta	1898
Ser Pro Pro Ser Met Ser Thr Val Thr Gly Phe Gln Gln Thr Gln Leu	
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cag aaa cct acc atc act gcc act gcc acc aca act gcc acc act gat	1946
Gln Lys Pro Thr Ile Thr Ala Thr Ala Thr Thr Thr Ala Thr Thr Asp	
595	600
605	
gaa tca aaa aca gag acg aag gac aat aaa gaa gat att aaa ata ctg	1994
Glu Ser Lys Thr Glu Thr Lys Asp Asn Lys Glu Asp Ile Lys Ile Leu	
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620	
att gca tct cca tct tct acc caa gta cct caa gaa acg acc act gct	2042
Ile Ala Ser Pro Ser Ser Thr Gln Val Pro Gln Glu Thr Thr Thr Ala	
625	630
635	
aag gca tca gca tac agt ggc act cac agt cgg aca gcc tca cca gac	2090
Lys Ala Ser Ala Tyr Ser Gly Thr His Ser Arg Thr Ala Ser Pro Asp	
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650	655
aga gca gga aag aga gtc ata gaa cag aca gac aaa gct cat cca agg	2138
Arg Ala Gly Lys Arg Val Ile Glu Gln Thr Asp Lys Ala His Pro Arg	
660	665
670	
agc ctt aac ctg tct gcc act ttg aat caa aga aat act gtt cct gag	2186
Ser Leu Asn Leu Ser Ala Thr Leu Asn Gln Arg Asn Thr Val Pro Glu	
675	680
685	

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 690 695 700
 cga aaa atg gaa cat gat ggc tcc ctt ttt caa gca gca gga att gga 2282
 Arg Lys Met Glu His Asp Gly Ser Leu Phe Gln Ala Ala Gly Ile Gly
 705 710 715
 aca tta ttg cag caa cca ggc gac tgt gca cct act atg tca ctt tcc 2330
 Thr Leu Leu Gln Gln Pro Gly Asp Cys Ala Pro Thr Met Ser Leu Ser
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 tgg aaa cga gtg aaa gga ttc ata tct agt gaa cag aat gga acg gag 2378
 Trp Lys Arg Val Lys Gly Phe Ile Ser Ser Glu Gln Asn Gly Thr Glu
 740 745 750
 caa aag act att att tta ata ccc tcc gat tta gca tgc aga ctg ctg 2426
 Gln Lys Thr Ile Ile Leu Ile Pro Ser Asp Leu Ala Cys Arg Leu Leu
 755 760 765
 ggg cag tca atg gat gtg agt gga tta cca cag ctg acc agt tac gat 2474
 Gly Gln Ser Met Asp Val Ser Gly Leu Pro Gln Leu Thr Ser Tyr Asp
 770 775 780
 tgt gaa gtt aat gct ccc ata caa ggc agc aga aac cta ctg cag ggt 2522
 Cys Glu Val Asn Ala Pro Ile Gln Gly Ser Arg Asn Leu Leu Gln Gly
 785 790 795
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 800 805 810
 atctcatccc ttttgattgt taatgttttt gticagttgt tgtttgttgt tgggtttttg 2628
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<211> 810

<212> PRT

<213> Mus musculus

<400> 760

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Pro Leu Pro His Asn Val Ser Ser His Leu Asp Lys Ala Ser Val Met

35 40 45

Arg Leu Thr Ile Ser Tyr Leu Arg Val Arg Lys Leu Leu Asp Ala Gly

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Leu Lys Ala Leu Asp Gly Phe Val Met Val Leu Thr Asp Asp Gly Asp		
85	90	95
Met Val Tyr Ile Ser Asp Asn Val Asn Lys Tyr Met Gly Leu Thr Gln		
100	105	110
Phe Glu Leu Ala Gly His Ser Val Phe Asp Phe Thr His Pro Cys Asp		
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His Glu Glu Met Arg Glu Met Leu Thr His Arg Asn Gly Pro Val Arg		
130	135	140
Lys Gly Lys Glu Leu Asn Thr Gln Arg Ser Phe Phe Leu Arg Met Lys		
145	150	155
160		
Cys Thr Leu Thr Ser Arg Gly Arg Thr Met Asn Ile Lys Ser Ala Thr		
165	170	175
Trp Lys Val Leu His Cys Thr Gly His Ile His Val Tyr Asp Thr Asn		
180	185	190
Ser Asn Gln Pro Gln Cys Gly Tyr Lys Lys Pro Pro Met Thr Cys Leu		
195	200	205
Val Leu Ile Cys Glu Pro Ile Pro His Pro Ser Asn Ile Glu Ile Pro		
210	215	220
Leu Asp Ser Lys Thr Phe Leu Ser Arg His Ser Leu Asp Met Lys Phe		
225	230	235
240		
Ser Tyr Cys Asp Glu Arg Ile Thr Glu Leu Met Gly Tyr Glu Pro Glu		
245	250	255
Glu Leu Leu Gly Arg Ser Ile Tyr Glu Tyr Tyr His Ala Leu Asp Ser		
260	265	270
Asp His Leu Thr Lys Thr His His Asp Met Phe Thr Lys Gly Gln Val		
275	280	285

Thr Thr Gly Gln Tyr Arg Met Leu Ala Lys Arg Gly Gly Tyr Val Trp
 290 295 300
 Val Glu Thr Gln Ala Thr Val Ile Tyr Asn Thr Lys Asn Ser Gln Pro
 305 310 315 320
 Gln Cys Ile Val Cys Val Asn Tyr Val Val Ser Gly Ile Ile Gln His
 325 330 335
 Asp Leu Ile Phe Ser Leu Gln Gln Thr Glu Ser Val Leu Lys Pro Val
 340 345 350
 Glu Ser Ser Asp Met Lys Met Thr Gln Leu Phe Thr Lys Val Glu Ser
 355 360 365
 Glu Asp Thr Ser Cys Leu Phe Asp Lys Leu Lys Lys Glu Pro Asp Ala
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 Phe Gly Ser Asp Asp Thr Glu Thr Glu Asp Gln Gln Leu Glu Asp Val
 405 410 415
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 Ile Asn Leu Ala Met Ser Pro Leu Pro Ser Ser Glu Thr Pro Lys Pro
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 450 455 460
 Leu Glu Ser Ser Pro Glu Ser Leu Gly Leu Ser Phe Thr Met Pro Gln
 465 470 475 480
 Ile Gln Asp Gln Pro Ala Ser Pro Ser Asp Gly Ser Thr Arg Gln Ser
 485 490 495
 Ser Pro Glu Pro Asn Ser Pro Ser Glu Tyr Cys Phe Asp Val Asp Ser
 500 505 510
 Asp Met Val Asn Val Phe Lys Leu Glu Leu Val Glu Lys Leu Phe Ala

515	520	525
Glu Asp Thr Glu Ala Lys Asn Pro Phe Ser Thr Gln Asp Thr Asp Leu		
530	535	540
Asp Leu Glu Met Leu Ala Pro Tyr Ile Pro Met Asp Asp Asp Phe Gln		
545	550	555
Leu Arg Ser Phe Asp Gln Leu Ser Pro Leu Glu Ser Asn Ser Pro Ser		
565	570	575
Pro Pro Ser Met Ser Thr Val Thr Gly Phe Gln Gln Thr Gln Leu Gln		
580	585	590
Lys Pro Thr Ile Thr Ala Thr Ala Thr Thr Thr Ala Thr Thr Asp Glu		
595	600	605
Ser Lys Thr Glu Thr Lys Asp Asn Lys Glu Asp Ile Lys Ile Leu Ile		
610	615	620
Ala Ser Pro Ser Ser Thr Gln Val Pro Gln Glu Thr Thr Thr Ala Lys		
625	630	635
Ala Ser Ala Tyr Ser Gly Thr His Ser Arg Thr Ala Ser Pro Asp Arg		
645	650	655
Ala Gly Lys Arg Val Ile Glu Gln Thr Asp Lys Ala His Pro Arg Ser		
660	665	670
Leu Asn Leu Ser Ala Thr Leu Asn Gln Arg Asn Thr Val Pro Glu Glu		
675	680	685
Glu Leu Asn Pro Lys Thr Ile Ala Ser Gln Asn Ala Gln Arg Lys Arg		
690	695	700
Lys Met Glu His Asp Gly Ser Leu Phe Gln Ala Ala Gly Ile Gly Thr		
705	710	715
Leu Leu Gln Gln Pro Gly Asp Cys Ala Pro Thr Met Ser Leu Ser Trp		
725	730	735
Lys Arg Val Lys Gly Phe Ile Ser Ser Glu Gln Asn Gly Thr Glu Gln		
740	745	750

Lys Thr Ile Ile Leu Ile Pro Ser Asp Leu Ala Cys Arg Leu Leu Gly

755

760

765

Gln Ser Met Asp Val Ser Gly Leu Pro Gln Leu Thr Ser Tyr Asp Cys

770

775

780

Glu Val Asn Ala Pro Ile Gln Gly Ser Arg Asn Leu Leu Gln Gly Glu

785

790

795

800

Glu Leu Leu Arg Ala Leu Asp Gln Val Asn

805

810

<210> 761

<211> 2472

<212> DNA

<213> Mus musculus

<220>

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<222> (271).. (1713)

<400> 761

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Met Val Thr Phe Arg Asp Val Ala

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5

gtg gtc ttc agt gag gag gag ctg ggg ctg ctg gac gct gct cag agg 342

Val Val Phe Ser Glu Glu Glu Leu Gly Leu Leu Asp Ala Ala Gln Arg

10

15

20

aag ctg tac cac gat gtg atg ctg gag aac ttc agg atg ctg ctc tca 390
Lys Leu Tyr His Asp Val Met Leu Glu Asn Phe Arg Met Leu Leu Ser
25 30 35 40
gtg gga gac aag aat cct gag gag atg gag tct ctt gag gaa gtg gga 438
Val Gly Asp Lys Asn Pro Glu Glu Met Glu Ser Leu Glu Glu Val Gly
45 50 55
ttg agg cac ctg tca cat gag gcg ctt ttc tgc tca caa atc tgg cag 486
Leu Arg His Leu Ser His Glu Ala Leu Phe Cys Ser Gln Ile Trp Gln
60 65 70
cag gtt agc agg gac cta atg aag gct gga gac tgc aga gta agc atc 534
Gln Val Ser Arg Asp Leu Met Lys Ala Gly Asp Cys Arg Val Ser Ile
75 80 85
agg gaa act ggc tct ccg ttg aag cga gat gat gca cat ggt gca gac 582
Arg Glu Thr Gly Ser Pro Leu Lys Arg Asp Asp Ala His Gly Ala Asp
90 95 100
agg aag tac agc aaa cat tcc ggt cag aaa cca tgg ctc caa ctc cac 630
Arg Lys Tyr Ser Lys His Ser Gly Gln Lys Pro Trp Leu Gln Leu His
105 110 115 120
tgt gga aca gac ggt ggt gaa gaa cct tac aga gag gag agg agc gag 678
Cys Gly Thr Asp Gly Gly Glu Glu Pro Tyr Arg Glu Glu Arg Ser Glu
125 130 135
aaa gac tct tgg gac tct cct ctg cag gct aac ggg cga ccc ccc gca 726
Lys Asp Ser Trp Asp Ser Pro Leu Gln Ala Asn Gly Arg Pro Pro Ala
140 145 150
gga gag aag agg tat agg tgt gaa aaa tgt gac cac gcc ttc tgt cgg 774
Gly Glu Lys Arg Tyr Arg Cys Glu Lys Cys Asp His Ala Phe Cys Arg
155 160 165
tta tcg ggt ctc caa gcc cat cag gtg agg cac act gga gag aag cca 822
Leu Ser Gly Leu Gln Ala His Gln Val Arg His Thr Gly Glu Lys Pro

170	175	180	
tac aag tgt gag gag tgt ggc aag ggc ttc act cgg gcc tcc acc ctt	870		
Tyr Lys Cys Glu Glu Cys Gly Lys Gly Phe Thr Arg Ala Ser Thr Leu			
185	190	195	200
ctg gac cat cag cgg ggc cac act gga aac aag ccc tat cag tgc cat	918		
Leu Asp His Gln Arg Gly His Thr Gly Asn Lys Pro Tyr Gln Cys His			
205	210	215	
gct tgc tgg aag agt ttc tgt cac agc tcg gag ttt aac aat cac ata	966		
Ala Cys Trp Lys Ser Phe Cys His Ser Ser Glu Phe Asn Asn His Ile			
220	225	230	
aga gtc cac acg gga gag aaa ccc tat gta tgc gag gag tgt ggg aaa	1014		
Arg Val His Thr Gly Glu Lys Pro Tyr Val Cys Glu Glu Cys Gly Lys			
235	240	245	
ggc ttc agc cag gcc tcc cat ctc ctg gcc cat cag aga ggc cac act	1062		
Gly Phe Ser Gln Ala Ser His Leu Leu Ala His Gln Arg Gly His Thr			
250	255	260	
gga gag aaa ccc tac aaa tgt agc acg tgt ggg aag ggc ttc agc cgg	1110		
Gly Glu Lys Pro Tyr Lys Cys Ser Thr Cys Gly Lys Gly Phe Ser Arg			
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Ser Ser Asp Leu Asn Val His Cys Arg Ile His Thr Gly Glu Lys Pro			
285	290	295	
tat aag tgt gag acg tgt ggg aaa gcc ttt agt cgg gtc tcc ata ctc	1206		
Tyr Lys Cys Glu Thr Cys Gly Lys Ala Phe Ser Arg Val Ser Ile Leu			
300	305	310	
cag gtg cac cag agg gtc cac agt gaa gac aaa ccg tac cag tgc gca	1254		
Gln Val His Gln Arg Val His Ser Glu Asp Lys Pro Tyr Gln Cys Ala			
315	320	325	
gag tgt ggg agg ggc ttc act gta gag tca cac ctt caa gcg cac cag	1302		

Glu Cys Gly Arg Gly Phe Thr Val Glu Ser His Leu Gln Ala His Gln
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 Arg Ser His Thr Gly Glu Arg Pro Tyr Gln Cys Glu Glu Cys Gly Arg
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 Gly Phe Cys Arg Ala Ser Asn Phe Leu Ala His Arg Gly Val His Thr
 365 370 375
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 380 385 390
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 Arg Ser Tyr Leu His Asp His His Arg Ile His Thr Gly Glu Lys Pro
 395 400 405
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 Tyr Lys Cys Glu Glu Cys Gly Lys Val Phe Ser Trp Ser Ser Tyr Leu
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 aag gcc cac cag aga gtt cac aca gga gag aaa cca tac aga tgt gag 1590
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 425 430 435 440
 gag tgt ggg aag ggt ttc agc tgg agc tca agt ctc cta att cac cag 1638
 Glu Cys Gly Lys Gly Phe Ser Trp Ser Ser Ser Leu Leu Ile His Gln
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 ggc tca cag ggg aaa caa act cta taa tgttttatag ttgatattt 1733
 Gly Ser Gln Gly Lys Gln Thr Leu
 475 480

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<210> 762

<211> 480

<212> PRT

<213> Mus musculus

<400> 762

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Gln Lys Pro Trp Leu Gln Leu His Cys Gly Thr Asp Gly Gly Glu Glu			
115	120	125	
Pro Tyr Arg Glu Glu Arg Ser Glu Lys Asp Ser Trp Asp Ser Pro Leu			
130	135	140	
Gln Ala Asn Gly Arg Pro Pro Ala Gly Glu Lys Arg Tyr Arg Cys Glu			
145	150	155	160
Lys Cys Asp His Ala Phe Cys Arg Leu Ser Gly Leu Gln Ala His Gln			
165	170	175	
Val Arg His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys			
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Gly Phe Thr Arg Ala Ser Thr Leu Leu Asp His Gln Arg Gly His Thr			
195	200	205	
Gly Asn Lys Pro Tyr Gln Cys His Ala Cys Trp Lys Ser Phe Cys His			
210	215	220	
Ser Ser Glu Phe Asn Asn His Ile Arg Val His Thr Gly Glu Lys Pro			
225	230	235	240
Tyr Val Cys Glu Glu Cys Gly Lys Gly Phe Ser Gln Ala Ser His Leu			
245	250	255	
Leu Ala His Gln Arg Gly His Thr Gly Glu Lys Pro Tyr Lys Cys Ser			
260	265	270	
Thr Cys Gly Lys Gly Phe Ser Arg Ser Ser Asp Leu Asn Val His Cys			
275	280	285	
Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Thr Cys Gly Lys			
290	295	300	

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305 310 315 320
Glu Asp Lys Pro Tyr Gln Cys Ala Glu Cys Gly Arg Gly Phe Thr Val
325 330 335
Glu Ser His Leu Gln Ala His Gln Arg Ser His Thr Gly Glu Arg Pro
340 345 350
Tyr Gln Cys Glu Glu Cys Gly Arg Gly Phe Cys Arg Ala Ser Asn Phe
355 360 365
Leu Ala His Arg Gly Val His Thr Gly Glu Lys Pro Tyr Arg Cys Asp
370 375 380
Ile Cys Gly Lys Arg Phe Arg Gln Arg Ser Tyr Leu His Asp His His
385 390 395 400
Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys
405 410 415
Val Phe Ser Trp Ser Ser Tyr Leu Lys Ala His Gln Arg Val His Thr
420 425 430
Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys Gly Phe Ser Trp
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<211> 3513

<212> DNA

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<220>

<221> CDS

<222> (52).. (1464)

<400> 763

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Thr Thr Ser Lys Glu Ser Leu Glu Ser Asn Leu Arg Gln Leu Lys Cys
      5              10              15
cat ttc acc tgg aac ctg ata gca gaa gat gag tcc ttg gat gag ttt 153
His Phe Thr Trp Asn Leu Ile Ala Glu Asp Glu Ser Leu Asp Glu Phe
      20              25              30
gag gac agg gtg ttt aac aag gat gag ttt cag aac agt gag ttt aaa 201
Glu Asp Arg Val Phe Asn Lys Asp Glu Phe Gln Asn Ser Glu Phe Lys
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gcc acc atg tgc aac ata ctg gcc tat gta aag cac tgc aga ggt cta 249
Ala Thr Met Cys Asn Ile Leu Ala Tyr Val Lys His Cys Arg Gly Leu
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Asn Glu Ala Ala Leu Gln Cys Leu Gly Glu Ala Glu Gly Phe Ile Gln
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caa cag cat cct gac caa gta gaa atc aga agt ctg gtc acc tgg gga 345
Gln Gln His Pro Asp Gln Val Glu Ile Arg Ser Leu Val Thr Trp Gly
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aac tat gct tgg gtc tac tat cac atg ggc cag ttc tca aag gct cag 393
Asn Tyr Ala Trp Val Tyr Tyr His Met Gly Gln Phe Ser Lys Ala Gln
      100              105              110
gct tat ctg gat aaa gtg aaa cag gtc tgc aag aag ttt tcc agc ccc 441

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1835/2644

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 His His Met Leu Asn Arg Arg Glu Met Val Phe Ser Gly Asp Arg Lys
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 Lys Leu Glu Glu Leu Ile Gln Leu Ala Val Asn His Leu Arg Lys Ala
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 Glu Glu Ile Lys Glu Met Leu Glu Tyr Ser Cys Ser Phe Leu Ala Asp
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 Leu Tyr Ile Ile Ala Lys Lys Tyr Asp Glu Ala Asp Tyr Tyr Phe Gln
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	85	90
Trp Gly Asn Tyr Ala Trp Val Tyr Tyr His Met Gly Gln Phe Ser Lys		95
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Ala Gln Ala Tyr Leu Asp Lys Val Lys Gln Val Cys Lys Lys Phe Ser		
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Ser Pro Tyr Arg Ile Glu Asn Pro Ala Leu Asp Cys Glu Glu Gly Trp		
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Ala Arg Leu Lys Cys Thr Lys Asn Gln Asn Glu Arg Val Lys Val Cys		
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Phe Gln Lys Ala Leu Glu Lys Asp Pro Lys Asn Pro Glu Phe Thr Ser		160
	165	170
Gly Trp Ala Ile Ala Asn Tyr Arg Leu Asp Asp Trp Pro Ala Arg Asn		175
180	185	190
Tyr Cys Ile Asp Ser Leu Glu Gln Ala Ile Gln Leu Ser Pro Asp Asn		
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Thr Tyr Val Lys Val Leu Leu Ala Leu Lys Leu Asp Ala Val His Lys		
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Asn Gln Ala Met Ala Leu Val Glu Glu Ala Leu Lys Lys Asp Pro Ser		
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Ala Ile Asp Thr Leu Leu Arg Ala Ala Arg Phe Tyr Cys Lys Val Tyr		240
	245	250
Asp Thr Asp Arg Ala Ile Gln Leu Leu Arg Lys Ala Leu Glu Lys Leu		255
260	265	270
Pro Asn Asn Ala Tyr Val His Tyr Tyr Met Gly Cys Cys Tyr Arg Ser		
275	280	285

Lys Val His His Met Leu Asn Arg Arg Glu Met Val Phe Ser Gly Asp
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 Arg Lys Lys Leu Glu Glu Leu Ile Gln Leu Ala Val Asn His Leu Arg
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 Lys Ala Glu Glu Ile Lys Glu Met Leu Glu Tyr Ser Cys Ser Phe Leu
 325 330 335
 Ala Asp Leu Tyr Ile Ile Ala Lys Lys Tyr Asp Glu Ala Asp Tyr Tyr
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 Phe Gln Lys Glu Leu Ser Lys Asp Leu Pro Pro Gly Pro Lys Gln Leu
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ccccgggcgc cggcggctcg ggaac atg gcg gcg tgc atc ggg gag agg atc 232
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                                1             5
gag gac ttt aag gtt gga aat cta ctc ggt aaa gga tca ttt gct ggt 280
Glu Asp Phe Lys Val Gly Asn Leu Leu Gly Lys Gly Ser Phe Ala Gly
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gtc tac aga gct gag tcc ata cac act ggt ttg gaa gtt gca atc aaa 328
Val Tyr Arg Ala Glu Ser Ile His Thr Gly Leu Glu Val Ala Ile Lys
30             35             40
atg ata gat aag aaa gcc atg tac aaa gct gga atg gta cag aga gtc 376
Met Ile Asp Lys Lys Ala Met Tyr Lys Ala Gly Met Val Gln Arg Val
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caa aat gag gtg aaa ata cat tgc cag ttg aaa cac ccc tct gtc ttg 424
Gln Asn Glu Val Lys Ile His Cys Gln Leu Lys His Pro Ser Val Leu
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Glu Leu Tyr Asn Tyr Phe Glu Asp Asn Asn Tyr Val Tyr Leu Val Leu
75             80             85
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Glu Met Cys His Asn Gly Glu Met Asn Arg Tyr Leu Lys Asn Arg Met

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Thr Gly Met Leu Tyr Leu His Ser His Gly Ile Leu His Arg Asp Leu				
	125	130	135	
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Thr Leu Ser Asn Ile Leu Leu Thr Arg Asn Met Asn Ile Lys Ile Ala				
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Leu Ser Arg Glu Ala Gln Asp Leu Ile His Gln Leu Leu Arg Arg Asn				
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cct gca gat cgg tta agt ctg tct tct gtg ttg gac cat cct ttc atg	1000			

Pro	Ala	Asp	Arg	Leu	Ser	Leu	Ser	Ser	Val	Leu	Asp	His	Pro	Phe	Met	
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Ser	Met	Asp	Ser	Gly	His	Ala	Thr	Leu	Ser	Thr	Thr	Ile	Thr	Ala	Ser	
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ggt	caa	cca	ctt	cca	aat	aaa	att	act	gta	ttt	caa	aaa	aat	aaa	aat	1192
Gly	Gln	Pro	Leu	Pro	Asn	Lys	Ile	Thr	Val	Phe	Gln	Lys	Asn	Lys	Asn	
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Ser	Val	Glu	Arg	Cys	His	Ser	Val	Glu	Met	Leu	Ser	Lys	Pro	Arg	Arg	
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Phe Pro Leu Ala Asp Arg Pro Pro Leu Pro Thr Asp Asn Ile Ser Arg			
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Tyr Ser Phe Asp Asn Leu Pro Glu Lys Tyr Trp Arg Lys Tyr Gln Tyr			
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Tyr Phe Thr Arg Tyr Ala Lys Cys Ile Leu Met Glu Asn Ser Pro Gly			
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 Tyr Ile Ser Pro Glu Ile Ala Thr Arg Ser Ala His Gly Leu Glu Ser
 180 185 190
 Asp Ile Trp Ser Leu Gly Cys Met Ser Tyr Thr Leu Leu Ile Gly Arg
 195 200 205
 Pro Pro Phe Asp Thr Asp Thr Val Lys Asn Thr Leu Asn Lys Val Val
 210 215 220
 Leu Ala Asp Tyr Glu Met Pro Ala Phe Leu Ser Arg Glu Ala Gln Asp
 225 230 235 240
 Leu Ile His Gln Leu Leu Arg Arg Asn Pro Ala Asp Arg Leu Ser Leu

	245		250		255
Ser Ser Val Leu Asp His Pro Phe Met Ser Arg Asn Pro Ser Pro Lys					
	260		265		270
Ser Lys Asp Val Gly Thr Val Glu Asp Ser Met Asp Ser Gly His Ala					
	275		280		285
Thr Leu Ser Thr Thr Ile Thr Ala Ser Ser Gly Thr Ser Leu Ser Gly					
	290		295		300
Ser Leu Leu Asp Arg Arg Leu Leu Val Gly Gln Pro Leu Pro Asn Lys					
305		310		315	320
Ile Thr Val Phe Gln Lys Asn Lys Asn Ser Ser Asp Phe Ser Ser Gly					
	325		330		335
Asp Gly Ser Asn Phe Cys Thr Gln Trp Gly Asn Pro Glu Gln Glu Ala					
	340		345		350
Asn Ser Arg Gly Arg Gly Arg Val Ile Glu Asp Ala Glu Glu Arg Pro					
	355		360		365
His Ser Arg Tyr Leu Arg Arg Ala His Ser Ser Asp Arg Ala Ser Pro					
	370		375		380
Ser Asn Gln Ser Arg Ala Lys Thr Tyr Ser Val Glu Arg Cys His Ser					
385		390		395	400
Val Glu Met Leu Ser Lys Pro Arg Arg Ser Leu Asp Glu Asn Gln His					
	405		410		415
Ser Ser Asn His His Cys Leu Gly Lys Thr Pro Phe Pro Phe Ala Asp					
	420		425		430
Gln Thr Pro Gln Met Glu Met Val Gln Gln Trp Phe Gly Asn Leu Gln					
	435		440		445
Met Asn Ala His Leu Gly Glu Thr Asn Glu His His Thr Val Ser Pro					
	450		455		460
Asn Arg Asp Phe Gln Asp Tyr Pro Asp Leu Gln Asp Thr Leu Arg Asn					
465		470		475	480

Ala Trp Thr Asp Thr Arg Ala Ser Lys Asn Ala Asp Thr Ser Ala Asn
 485 490 495
 Val His Ala Val Lys Gln Leu Ser Ala Met Lys Tyr Met Ser Ala His
 500 505 510
 His His Lys Pro Glu Val Met Pro Gln Glu Pro Gly Leu His Pro His
 515 520 525
 Ser Glu Gln Ser Lys Asn Arg Ser Met Glu Ser Thr Leu Gly Tyr Gln
 530 535 540
 Lys Pro Thr Leu Arg Ser Ile Thr Ser Pro Leu Ile Ala His Arg Leu
 545 550 555 560
 Lys Pro Ile Arg Gln Lys Thr Lys Lys Ala Val Val Ser Ile Leu Asp
 565 570 575
 Ser Glu Glu Val Cys Val Glu Leu Leu Arg Glu Cys Ala Ser Glu Gly
 580 585 590
 Tyr Val Lys Glu Val Leu Gln Ile Ser Ser Asp Gly Thr Met Ile Thr
 595 600 605
 Val Tyr Tyr Pro Asn Asp Gly Arg Gly Phe Pro Leu Ala Asp Arg Pro
 610 615 620
 Pro Leu Pro Thr Asp Asn Ile Ser Arg Tyr Ser Phe Asp Asn Leu Pro
 625 630 635 640
 Glu Lys Tyr Trp Arg Lys Tyr Gln Tyr Ala Ser Arg Phe Ile Gln Leu
 645 650 655
 Val Arg Ser Lys Thr Pro Lys Ile Thr Tyr Phe Thr Arg Tyr Ala Lys
 660 665 670
 Cys Ile Leu Met Glu Asn Ser Pro Gly Ala Asp Phe Glu Val Trp Phe
 675 680 685
 Tyr Asp Gly Ala Lys Ile His Lys Thr Glu Asn Leu Ile His Ile Ile
 690 695 700
 Glu Lys Thr Gly Ile Ser Tyr Asn Leu Lys Asn Glu Asn Glu Val Thr

705	710	715	720
Ser Leu Lys Glu Glu Val Lys Val Tyr Met Asp His Ala Asn Glu Gly			
	725	730	735
His Arg Ile Cys Leu Ser Leu Glu Ser Val Ile Ser Glu Glu Glu Lys			
	740	745	750
Arg Ser Arg Gly Ser Ser Phe Phe Pro Ile Ile Val Gly Arg Lys Pro			
	755	760	765
Gly Asn Thr Ser Ser Pro Lys Ala Leu Ser Ala Pro Pro Val Asp Pro			
	770	775	780
Ser Cys Cys Lys Gly Glu Gln Ala Ser Ala Ser Arg Leu Ser Val Asn			
785	790	795	800
Ser Ala Ala Phe Pro Thr Gln Ser Pro Gly Leu Ser Pro Ser Thr Val			
	805	810	815
Thr Val Glu Gly Leu Gly His Thr Ala Thr Ala Thr Gly Thr Gly Val			
	820	825	830
Ser Ser Ser Leu Pro Lys Ser Ala Gln Leu Leu Lys Ser Val Phe Val			
	835	840	845
Lys Asn Val Gly Trp Ala Thr Gln Leu Thr Ser Gly Ala Val Trp Val			
	850	855	860
Gln Phe Asn Asp Gly Ser Gln Leu Val Val Gln Ala Gly Val Ser Ser			
865	870	875	880
Ile Ser Tyr Thr Ser Pro Asp Gly Gln Thr Thr Arg Tyr Gly Glu Asn			
	885	890	895
Glu Lys Leu Pro Glu Tyr Ile Lys Gln Lys Leu Gln Cys Leu Ser Ser			
	900	905	910
Ile Leu Leu Met Phe Ser Asn Pro Thr Pro Asn Phe Gln			
	915	920	925

<210> 767

<211> 772

<212> DNA

<213> *Mus musculus*

<400> 767

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tctaaacggg ccttgagatt tctgactcct gctctcttgc ttcttaggga aaatgctcaa 120
catccacca tccttgctcc ctccctttaa gggttcaaat gcccacgagc aagtcctgga 180
agctggagtc acaatcactg ggtgtaccgt acactttgtc gctgtgagta tgtctgtccc 240
taccaagctt ttgacctagc tagcgtctgg ctgccgtcta cactggccgg aaaggttgaa 300
aacgtttgct tccttttcca ggaagatgta gatgccggac aaatcatcct gcaggaagct 360
gtccctgtgc ggaggggtga cactgtggca acgctgtctg aacgggtcaa agtggcagaa 420
cataagatct ttctgccgc tcttcagctg gtggccagcg gggctgtgca gctgcgagaa 480
gatggcaaga tccactgggc caaggagcag tgaccgggcc tgatgcagga gtgggctcag 540
tgctgagaga gaggcagggc cttgctgggt gccitttcat catgaccatg gccaaactga 600
aatacctgct ggcaaaaaga cttaatcct taccgctgc catTTTTTaa ataaataggt 660
tcattgaaaa gaaaacttat ctagcattta ttaagacat ccagaagtgg aaagtcttag 720
gccgccaaca tcttgggcac ctacgaacct agacgagaga tctccaagcc tt 772
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<210> 768

<211> 267

<212> DNA

<213> *Mus musculus*

<400> 768

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acaatgccag tctttcactc agagacagca cctgccctcg agcgcatact gagtatcagt 60
gctgatattg agacgattgg agaaattctg aagaaaatca tcttaccttg caagagggcc 120
tgcagttgcc atcactcact gcaaccagcc agctcccgtc cgaatctgat ggtgtggaat 180
gcttaaatta cccacattat aaacggacgt cgactttcat tgcgacgtgg agactgtttg 240
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actgatcacg agtatgcgca ggacgaa

267

<210> 769

<211> 473

<212> DNA

<213> Mus musculus

<400> 769

cacaggcgct itccgaggcg gccttcctac tcgtgtggtc ttgtgactt ccaccatggc 60
gtacccggcc agggcaaaaag gtgcagaagg tgatgggtgca gccatcaacc ttatcttcag 120
atacttgcaa aatagatctc gaattcaggt gtggctgtat gaacaagtga atatgcggat 180
agaaggttgt attattggct ttgatgagta catgaacctc gtattagatg atgcagaaga 240
gattcattct aaaacaaaagt caagaaaaca actgggtcgg atcatgctaa aaggagatga 300
tattactctg ctcccaagt gtgtcccaat ctagcagtga atggatgaagt ctgtaggatg 360
ttgagaagac cccttgagcg tgtttaaaga tgtctgtctg aacctgcatt tactcaacag 420
gtnttacttg cacattatta ttaggtgaca ataaatgctg taggaagttc ttg 473

<210> 770

<211> 689

<212> DNA

<213> Mus musculus

<400> 770

ctctctctcc gccgccgcc aggcgcgcgc cgtgcgcgc gccctccgga ctctctctgc 60
cgcgccccgc antctccgag cgcggctcga tcggcgcacg tgcccaagag cccgcgggtc 120
gagcggctcg cggatgcagat tttctttaat cctctgagga ctctggaaaa caggatggct 180
gcaaacaagc ccaagggtca gaattctttg gccttacaca aagtcacat ggtgggcagt 240
ggtgggtgtg gcaagtctgc cctgactctg cagttcatgt acgacgagtt tgtagaggac 300
tatgaacctc ccaaagcgga cagctacagg aagaaggtag tcctggacgg ggaagaagtg 360

cagatcgaca tcttagatac agcggggcag gaggactatg ctgcaattag agacaactac 420
 ttccgaagtg gggagggatt ctctgtgtct tctctatcac agagatggag tccttcgcag 480
 ctaccgcgga cttcagggag cagatittaa gagtaaaaga agatgagaat gticcatitc 540
 tcctggttgg tacaagtcag atctagaaga tagaaggcag gtttctgtag aagaggcaaa 600
 aaacagagct gaccagtg acgtntaact atgtgagacg ttgctanaag cgcgctacgt 660
 tgacaaggta tttttgattt atgagggaa 689

<210> 771

<211> 2177

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (108).. (1928)

<400> 771

gaatcccgtg tagcttttgt gaggtgttgt gacagctggt ttcagtcagt gccacctatt 60
 ttgtcggcag gctcttccga agaccccgca tgcgtccgaa gctggaa atg gaa cca 116

Met Glu Pro

1

gtg acc ttt gag gat gtg gct gtg aac ttc acc tca gga gag tgg act 164

Val Thr Phe Glu Asp Val Ala Val Asn Phe Thr Ser Gly Glu Trp Thr

5

10

15

ttg ttg gat tcc agt caa aag aag ctc tac aga gat gtg atg aag gaa 212

Leu Leu Asp Ser Ser Gln Lys Lys Leu Tyr Arg Asp Val Met Lys Glu

20

25

30

35

aac ttt ttg aac ctg atc tcc ata gag aaa aca caa gaa gaa aat gtt 260

Asn Phe Leu Asn Leu Ile Ser Ile Glu Lys Thr Gln Glu Glu Asn Val

40	45	50	
gaa gag gac tac caa aat ctc aga act caa gtg att gag aaa gat ggt			308
Glu Glu Asp Tyr Gln Asn Leu Arg Thr Gln Val Ile Glu Lys Asp Gly			
55	60	65	
gaa tgt gaa cgt ggt tgt caa tgt gaa caa acc cag gca cag agt ccg			356
Glu Cys Glu Arg Gly Cys Gln Cys Glu Gln Thr Gln Ala Gln Ser Pro			
70	75	80	
gag tat att gtt aat gag gac atg cct cct gca gca aca gga tgt gga			404
Glu Tyr Ile Val Asn Glu Asp Met Pro Pro Ala Ala Thr Gly Cys Gly			
85	90	95	
agc agt ttg tat gtg aga aac gtc att ggt aat tca ccc tgg gat gta			452
Ser Ser Leu Tyr Val Arg Asn Val Ile Gly Asn Ser Pro Trp Asp Val			
100	105	110	115
cac ctc agt ggt caa act caa gag aaa cca ttt gag tgt aag gaa cct			500
His Leu Ser Gly Gln Thr Gln Glu Lys Pro Phe Glu Cys Lys Glu Pro			
120	125	130	
gtg gag aag gct ttt aaa cct gag gaa tgc tgg gaa gat atg ggt cat			548
Val Glu Lys Ala Phe Lys Pro Glu Glu Cys Trp Glu Asp Met Gly His			
135	140	145	
tct aag gca ttt cag gtt cat gga agt tct cga gag aaa tcc tat gaa			596
Ser Lys Ala Phe Gln Val His Gly Ser Ser Arg Glu Lys Ser Tyr Glu			
150	155	160	
aat cag caa tgt gat gca gct cat aga aac ctc cat tgt gat ccg cat			644
Asn Gln Gln Cys Asp Ala Ala His Arg Asn Leu His Cys Asp Pro His			
165	170	175	
cat gag aga acg cat gat gga aat aaa aac aat gag aat acc ttt atg			692
His Glu Arg Thr His Asp Gly Asn Lys Asn Asn Glu Asn Thr Phe Met			
180	185	190	195
aag tgt aca tct gac cag atc gat gaa aaa ctc cac agt gaa gta aag			740

Lys Cys Thr Ser Asp Gln Ile Asp Glu Lys Leu His Ser Glu Val Lys
 200 205 210
 cca ttt gtg tgt aag cag tgt gga gaa gcc ttt gtt aat tcc agt cac 788
 Pro Phe Val Cys Lys Gln Cys Gly Glu Ala Phe Val Asn Ser Ser His
 215 220 225
 ctt atc agt cat gag cga att cat att gta gaa aag tgt tat att tgc 836
 Leu Ile Ser His Glu Arg Ile His Ile Val Glu Lys Cys Tyr Ile Cys
 230 235 240
 aaa cag tgt ggg aaa aca ttt aga tat ttg tca tgc ttc caa aaa cat 884
 Lys Gln Cys Gly Lys Thr Phe Arg Tyr Leu Ser Cys Phe Gln Lys His
 245 250 255
 gaa aga att cac agt gga gag agg cct tat gtg tgt gag caa tgt ggg 932
 Glu Arg Ile His Ser Gly Glu Arg Pro Tyr Val Cys Glu Gln Cys Gly
 260 265 270 275
 aaa gga ttt att cag ttg aaa tac ctt ctc atg cac caa agg agt cat 980
 Lys Gly Phe Ile Gln Leu Lys Tyr Leu Leu Met His Gln Arg Ser His
 280 285 290
 gga gag aat tct tat gaa tgt aaa cat tgt gaa aaa gtc ttc act att 1028
 Gly Glu Asn Ser Tyr Glu Cys Lys His Cys Glu Lys Val Phe Thr Ile
 295 300 305
 tcc agt gtc cat aat gtt cat gaa gat att caa gat gga gac aag cca 1076
 Ser Ser Val His Asn Val His Glu Asp Ile Gln Asp Gly Asp Lys Pro
 310 315 320
 tat tca tgc aca cat tgt ggg aaa gct ttc tct agt ccc agt gac tat 1124
 Tyr Ser Cys Thr His Cys Gly Lys Ala Phe Ser Ser Pro Ser Asp Tyr
 325 330 335
 aat agt tgt gaa aga att cac act gga gag aat ccc ttt gta tgt aag 1172
 Asn Ser Cys Glu Arg Ile His Thr Gly Glu Asn Pro Phe Val Cys Lys
 340 345 350 355

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aaa tgt ggg aaa gcc ttc aaa cgt ttg ggg cat ttt atg aat cat gaa 1220
Lys Cys Gly Lys Ala Phe Lys Arg Leu Gly His Phe Met Asn His Glu
          360          365          370
agg att cac act gga gag aag cct tat gcc tgc aaa cat tgt gga aaa 1268
Arg Ile His Thr Gly Glu Lys Pro Tyr Ala Cys Lys His Cys Gly Lys
          375          380          385
gcc ttc acc agt tcc agt gac cgg aac agt cat gaa aga att cac act 1316
Ala Phe Thr Ser Ser Ser Asp Arg Asn Ser His Glu Arg Ile His Thr
          390          395          400
gga gag aaa ccc ttt gtc tgt aaa acc tgt ggg aaa gcc ttc agt cgt 1364
Gly Glu Lys Pro Phe Val Cys Lys Thr Cys Gly Lys Ala Phe Ser Arg
          405          410          415
tct gat tat ctt atc aat cat aaa agg att cat acc gga gag aag cct 1412
Ser Asp Tyr Leu Ile Asn His Lys Arg Ile His Thr Gly Glu Lys Pro
          420          425          430          435
tat ccg tgt aag tat tgt ggg aaa gcc ttt gcc act tcc agt gac aga 1460
Tyr Pro Cys Lys Tyr Cys Gly Lys Ala Phe Ala Thr Ser Ser Asp Arg
          440          445          450
aac agt cat gaa aga att cat act ggt gag aga tcc ttt ctg tgt aaa 1508
Asn Ser His Glu Arg Ile His Thr Gly Glu Arg Ser Phe Leu Cys Lys
          455          460          465
aaa tgt ggg aaa gtg ttc att ctt tct ggt gat cta atc aag cac gag 1556
Lys Cys Gly Lys Val Phe Ile Leu Ser Gly Asp Leu Ile Lys His Glu
          470          475          480
agg att cac act gga gag aag cct tat gcc tgc aaa cat tgt gga aaa 1604
Arg Ile His Thr Gly Glu Lys Pro Tyr Ala Cys Lys His Cys Gly Lys
          485          490          495
gct ttc act act tca agt gcc cgc aac agt cat gaa aga att cac act 1652
Ala Phe Thr Thr Ser Ser Ala Arg Asn Ser His Glu Arg Ile His Thr

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500 505 510 515
 gga gag aag ccg tat aca tgt aag cat tgc aca aaa act ttt acc act 1700
 Gly Glu Lys Pro Tyr Thr Cys Lys His Cys Thr Lys Thr Phe Thr Thr
 520 525 530
 tcc agt acc cgt aac agt cat gaa aaa act cac act gca gag aag cat 1748
 Ser Ser Thr Arg Asn Ser His Glu Lys Thr His Thr Ala Glu Lys His
 535 540 545
 ttt gcg tgt aac ctt tgt ggg aaa acc ttc aac agt cag agt tcc tat 1796
 Phe Ala Cys Asn Leu Cys Gly Lys Thr Phe Asn Ser Gln Ser Ser Tyr
 550 555 560
 tac act cat aaa aaa ata cac tct atg aaa gag aaa ctt tat gta tgt 1844
 Tyr Thr His Lys Lys Ile His Ser Met Lys Glu Lys Leu Tyr Val Cys
 565 570 575
 aaa cac tgt ggg aaa gaa ttc act tac tgt ggt aat ttc ctt aag cat 1892
 Lys His Cys Gly Lys Glu Phe Thr Tyr Cys Gly Asn Phe Leu Lys His
 580 585 590 595
 gaa aga agt cac acc atg gaa aca tta tcc ata tga acaataggta 1938
 Glu Arg Ser His Thr Met Glu Thr Leu Ser Ile
 600 605
 aaagcatttc tgggtcctac atcccattag aaacctatat aaaaatctca cagtacagaa 1998
 cttgtataac tataaactgt gtggltcaact tgcctttatt gtgaggtatg gaaaaagttt 2058
 ggggtgggcca cgcgagatag cttagctagt catggttctt taggatagcc tgattttgat 2118
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<210> 772

<211> 606

<212> PRT

<213> Mus musculus

<400> 772

Met Glu Pro Val Thr Phe Glu Asp Val Ala Val Asn Phe Thr Ser Gly
 1 5 10 15
 Glu Trp Thr Leu Leu Asp Ser Ser Gln Lys Lys Leu Tyr Arg Asp Val
 20 25 30
 Met Lys Glu Asn Phe Leu Asn Leu Ile Ser Ile Glu Lys Thr Gln Glu
 35 40 45
 Glu Asn Val Glu Glu Asp Tyr Gln Asn Leu Arg Thr Gln Val Ile Glu
 50 55 60
 Lys Asp Gly Glu Cys Glu Arg Gly Cys Gln Cys Glu Gln Thr Gln Ala
 65 70 75 80
 Gln Ser Pro Glu Tyr Ile Val Asn Glu Asp Met Pro Pro Ala Ala Thr
 85 90 95
 Gly Cys Gly Ser Ser Leu Tyr Val Arg Asn Val Ile Gly Asn Ser Pro
 100 105 110
 Trp Asp Val His Leu Ser Gly Gln Thr Gln Glu Lys Pro Phe Glu Cys
 115 120 125
 Lys Glu Pro Val Glu Lys Ala Phe Lys Pro Glu Glu Cys Trp Glu Asp
 130 135 140
 Met Gly His Ser Lys Ala Phe Gln Val His Gly Ser Ser Arg Glu Lys
 145 150 155 160
 Ser Tyr Glu Asn Gln Gln Cys Asp Ala Ala His Arg Asn Leu His Cys
 165 170 175
 Asp Pro His His Glu Arg Thr His Asp Gly Asn Lys Asn Asn Glu Asn
 180 185 190
 Thr Phe Met Lys Cys Thr Ser Asp Gln Ile Asp Glu Lys Leu His Ser
 195 200 205
 Glu Val Lys Pro Phe Val Cys Lys Gln Cys Gly Glu Ala Phe Val Asn
 210 215 220

Ser Ser His Leu Ile Ser His Glu Arg Ile His Ile Val Glu Lys Cys
 225 230 235 240
 Tyr Ile Cys Lys Gln Cys Gly Lys Thr Phe Arg Tyr Leu Ser Cys Phe
 245 250 255
 Gln Lys His Glu Arg Ile His Ser Gly Glu Arg Pro Tyr Val Cys Glu
 260 265 270
 Gln Cys Gly Lys Gly Phe Ile Gln Leu Lys Tyr Leu Leu Met His Gln
 275 280 285
 Arg Ser His Gly Glu Asn Ser Tyr Glu Cys Lys His Cys Glu Lys Val
 290 295 300
 Phe Thr Ile Ser Ser Val His Asn Val His Glu Asp Ile Gln Asp Gly
 305 310 315 320
 Asp Lys Pro Tyr Ser Cys Thr His Cys Gly Lys Ala Phe Ser Ser Pro
 325 330 335
 Ser Asp Tyr Asn Ser Cys Glu Arg Ile His Thr Gly Glu Asn Pro Phe
 340 345 350
 Val Cys Lys Lys Cys Gly Lys Ala Phe Lys Arg Leu Gly His Phe Met
 355 360 365
 Asn His Glu Arg Ile His Thr Gly Glu Lys Pro Tyr Ala Cys Lys His
 370 375 380
 Cys Gly Lys Ala Phe Thr Ser Ser Ser Asp Arg Asn Ser His Glu Arg
 385 390 395 400
 Ile His Thr Gly Glu Lys Pro Phe Val Cys Lys Thr Cys Gly Lys Ala
 405 410 415
 Phe Ser Arg Ser Asp Tyr Leu Ile Asn His Lys Arg Ile His Thr Gly
 420 425 430
 Glu Lys Pro Tyr Pro Cys Lys Tyr Cys Gly Lys Ala Phe Ala Thr Ser
 435 440 445
 Ser Asp Arg Asn Ser His Glu Arg Ile His Thr Gly Glu Arg Ser Phe

450	455	460
Leu Cys Lys Lys Cys Gly Lys Val Phe Ile Leu Ser Gly Asp Leu Ile		
465	470	475
Lys His Glu Arg Ile His Thr Gly Glu Lys Pro Tyr Ala Cys Lys His		480
	485	490
Cys Gly Lys Ala Phe Thr Thr Ser Ser Ala Arg Asn Ser His Glu Arg		495
	500	505
Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Lys His Cys Thr Lys Thr		510
	515	520
Phe Thr Thr Ser Ser Thr Arg Asn Ser His Glu Lys Thr His Thr Ala		525
	530	535
Glu Lys His Phe Ala Cys Asn Leu Cys Gly Lys Thr Phe Asn Ser Gln		540
545	550	555
Ser Ser Tyr Tyr Thr His Lys Lys Ile His Ser Met Lys Glu Lys Leu		560
	565	570
Tyr Val Cys Lys His Cys Gly Lys Glu Phe Thr Tyr Cys Gly Asn Phe		575
	580	585
Leu Lys His Glu Arg Ser His Thr Met Glu Thr Leu Ser Ile		590
	595	600
		605

<210> 773

<211> 2292

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (2292)

<400> 773

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1 5 10 15	
cca ttg tca tac acc cgg ttt agc ctt gct cgg caa gta gat gga gat	96
Pro Leu Ser Tyr Thr Arg Phe Ser Leu Ala Arg Gln Val Asp Gly Asp	
20 25 30	
aac agt cat gtg gag atg aaa ctg gct gca gat gaa gaa gaa aat gcc	144
Asn Ser His Val Glu Met Lys Leu Ala Ala Asp Glu Glu Glu Asn Ala	
35 40 45	
gac aat aac atg aag gct agt gtc aga aaa ccc aag agg ttt aat gga	192
Asp Asn Asn Met Lys Ala Ser Val Arg Lys Pro Lys Arg Phe Asn Gly	
50 55 60	
aga ctc tgc ttt gca gct att gca cta gtc att ttc ttc ttg att gga	240
Arg Leu Cys Phe Ala Ala Ile Ala Leu Val Ile Phe Phe Leu Ile Gly	
65 70 75 80	
ttc atg agt ggc tac ctg ggc tat tgt aag cgt gta gaa caa aaa gag	288
Phe Met Ser Gly Tyr Leu Gly Tyr Cys Lys Arg Val Glu Gln Lys Glu	
85 90 95	
gag tgt gtg aaa ctg gct gaa acg gag gag aca gac aag tca gaa acc	336
Glu Cys Val Lys Leu Ala Glu Thr Glu Glu Thr Asp Lys Ser Glu Thr	
100 105 110	
atg gaa aca gag gat gtt cct aca tca tct cgc tta tat tgg gca gac	384
Met Glu Thr Glu Asp Val Pro Thr Ser Ser Arg Leu Tyr Trp Ala Asp	
115 120 125	
ctc aaa aca ctg ttg tca gag aag ttg aac tcc ata gag ttt gct gac	432
Leu Lys Thr Leu Leu Ser Glu Lys Leu Asn Ser Ile Glu Phe Ala Asp	
130 135 140	
acc atc aag cag ctg agc cag aat aca tac act cct cgt gag gct gga	480

Thr Ile Lys Gln Leu Ser Gln Asn Thr Tyr Thr Pro Arg Glu Ala Gly
 145 150 155 160
 tct caa aaa gat gaa agt ctt gcc tat tat att gaa aat cag ttc cat 528
 Ser Gln Lys Asp Glu Ser Leu Ala Tyr Tyr Ile Glu Asn Gln Phe His
 165 170 175
 gaa ttt aaa ttc agc aaa gtc tgg cga gat gaa cac tat gtg aag att 576
 Glu Phe Lys Phe Ser Lys Val Trp Arg Asp Glu His Tyr Val Lys Ile
 180 185 190
 caa gtg aaa agc agc att ggt caa aac atg gtg acc ata gtg cag tca 624
 Gln Val Lys Ser Ser Ile Gly Gln Asn Met Val Thr Ile Val Gln Ser
 195 200 205
 aat ggt aac tta gac cca gtg gag tct ccc gag ggt tat gtg gca ttc 672
 Asn Gly Asn Leu Asp Pro Val Glu Ser Pro Glu Gly Tyr Val Ala Phe
 210 215 220
 agt aaa cct aca gaa gtt tct ggt aaa ctg gtc cat gct aat ttt ggc 720
 Ser Lys Pro Thr Glu Val Ser Gly Lys Leu Val His Ala Asn Phe Gly
 225 230 235 240
 act aaa aag gac ttt gaa gaa cta agt tat tct gtg aat gga tct tta 768
 Thr Lys Lys Asp Phe Glu Glu Leu Ser Tyr Ser Val Asn Gly Ser Leu
 245 250 255
 gtg att gtt aga gca ggg gaa att act ttt gca gaa aag gtt gca aat 816
 Val Ile Val Arg Ala Gly Glu Ile Thr Phe Ala Glu Lys Val Ala Asn
 260 265 270
 gcc caa agc ttt aat gca att ggt gtc ctc ata tac atg gac aag aat 864
 Ala Gln Ser Phe Asn Ala Ile Gly Val Leu Ile Tyr Met Asp Lys Asn
 275 280 285
 aaa ttc ccc gtt gtt gag gca gac ctt gca ctc ttt gga cat gct cat 912
 Lys Phe Pro Val Val Glu Ala Asp Leu Ala Leu Phe Gly His Ala His
 290 295 300

cta gga act ggt gat cca tac aca cct ggc ttt cct tct ttc aat cat 960
 Leu Gly Thr Gly Asp Pro Tyr Thr Pro Gly Phe Pro Ser Phe Asn His
 305 310 315 320
 act cag ttt ccg cca tct cag tca tca ggg ttg cct aat ata cct gtg 1008
 Thr Gln Phe Pro Pro Ser Gln Ser Ser Gly Leu Pro Asn Ile Pro Val
 325 330 335
 caa aca atc tca aga gct gct gca gaa aag cta ttt gga aaa atg gaa 1056
 Gln Thr Ile Ser Arg Ala Ala Ala Glu Lys Leu Phe Gly Lys Met Glu
 340 345 350
 gga agc tgt cct gct aga tgg aac ata gat tct tca tgt aag ctg gaa 1104
 Gly Ser Cys Pro Ala Arg Trp Asn Ile Asp Ser Ser Cys Lys Leu Glu
 355 360 365
 ctt tca cag aat caa aat gtg aag ctc att gtg aaa aac gta ctg aaa 1152
 Leu Ser Gln Asn Gln Asn Val Lys Leu Ile Val Lys Asn Val Leu Lys
 370 375 380
 gaa aga aga ata ctt aac atc ttt gga gtt att aaa ggt tat gag gaa 1200
 Glu Arg Arg Ile Leu Asn Ile Phe Gly Val Ile Lys Gly Tyr Glu Glu
 385 390 395 400
 cca gac cgt tat gtt gta gta gga gcc cag aga gac gct ttg ggt gct 1248
 Pro Asp Arg Tyr Val Val Val Gly Ala Gln Arg Asp Ala Leu Gly Ala
 405 410 415
 ggt gtt gcg gcg aag tcc agt gtg gga aca ggt ctt ctg ttg aaa ctt 1296
 Gly Val Ala Ala Lys Ser Ser Val Gly Thr Gly Leu Leu Leu Lys Leu
 420 425 430
 gcc caa gta ttc tca gat atg att tca aaa gat gga ttt aga ccc agc 1344
 Ala Gln Val Phe Ser Asp Met Ile Ser Lys Asp Gly Phe Arg Pro Ser
 435 440 445
 aga agt ata atc ttt gcc agc tgg act gca ggc gac ttt gga gct gtt 1392
 Arg Ser Ile Ile Phe Ala Ser Trp Thr Ala Gly Asp Phe Gly Ala Val

450	455	460	
ggt gcc act gag tgg ttg gag gga tac ctt tca tct ttg cat tta aaa			1440
Gly Ala Thr Glu Trp Leu Glu Gly Tyr Leu Ser Ser Leu His Leu Lys			
465	470	475	480
gct ttc act tat att aat ttg gat aaa gtt gtc ctt ggt act agt aac			1488
Ala Phe Thr Tyr Ile Asn Leu Asp Lys Val Val Leu Gly Thr Ser Asn			
	485	490	495
ttc aaa gtt tct gcc agc ccc tta tta tat aca ctt atg gga aag ata			1536
Phe Lys Val Ser Ala Ser Pro Leu Leu Tyr Thr Leu Met Gly Lys Ile			
	500	505	510
atg caa gat gta aag cat cca gtt gat gga aaa tct cta tat aga gac			1584
Met Gln Asp Val Lys His Pro Val Asp Gly Lys Ser Leu Tyr Arg Asp			
	515	520	525
agc aat tgg att agc aaa gtt gag aaa ctt tcc ttt gac aat gct gca			1632
Ser Asn Trp Ile Ser Lys Val Glu Lys Leu Ser Phe Asp Asn Ala Ala			
	530	535	540
tat cct ttc ctt gca tat tct gga atc cca gca gtt tct ttt tgt ttt			1680
Tyr Pro Phe Leu Ala Tyr Ser Gly Ile Pro Ala Val Ser Phe Cys Phe			
545	550	555	560
tgt gag gat gca gac tat cct tat ttg ggc act aga ttg gat acc tat			1728
Cys Glu Asp Ala Asp Tyr Pro Tyr Leu Gly Thr Arg Leu Asp Thr Tyr			
	565	570	575
gag gca ttg act cag aaa gtt cct cag ctc aac caa atg gtt cgt aca			1776
Glu Ala Leu Thr Gln Lys Val Pro Gln Leu Asn Gln Met Val Arg Thr			
	580	585	590
gca gcg gaa gtg gct ggt cag ctc att att aaa ctt acc cat gac gtt			1824
Ala Ala Glu Val Ala Gly Gln Leu Ile Ile Lys Leu Thr His Asp Val			
	595	600	605
gaa ttg aac ctg gac tat gag atg tat aac agc aaa cta ctg tca ttt			1872

Glu Leu Asn Leu Asp Tyr Glu Met Tyr Asn Ser Lys Leu Leu Ser Phe
 610 615 620
 atg aag gat ctg aac cag ttc aaa aca gat atc agg gat atg ggt cta 1920
 Met Lys Asp Leu Asn Gln Phe Lys Thr Asp Ile Arg Asp Met Gly Leu
 625 630 635 640
 agt cta cag tgg ctg tat tcc gct cgt gga gac tac ttc cgt gct act 1968
 Ser Leu Gln Trp Leu Tyr Ser Ala Arg Gly Asp Tyr Phe Arg Ala Thr
 645 650 655
 tct aga cta aca act gat ttt cat aat gct gag aaa aca aac aga ttt 2016
 Ser Arg Leu Thr Thr Asp Phe His Asn Ala Glu Lys Thr Asn Arg Phe
 660 665 670
 gtc atg agg gaa atc aat gat cgt att atg aaa gtg gag tat cac ttc 2064
 Val Met Arg Glu Ile Asn Asp Arg Ile Met Lys Val Glu Tyr His Phe
 675 680 685
 ctg tcg ccc tat gta tct cca aga gag tct cct ttc cga cat atc ttc 2112
 Leu Ser Pro Tyr Val Ser Pro Arg Glu Ser Pro Phe Arg His Ile Phe
 690 695 700
 tgg ggc tct ggc tct cac act ctc tca gct tta gtg gag aac ttg aag 2160
 Trp Gly Ser Gly Ser His Thr Leu Ser Ala Leu Val Glu Asn Leu Lys
 705 710 715 720
 ctt cgt caa aaa aat att act gct tit aat gaa acc ctc ttc aga aac 2208
 Leu Arg Gln Lys Asn Ile Thr Ala Phe Asn Glu Thr Leu Phe Arg Asn
 725 730 735
 cag ttg gcc ctg gct act tgg act att cag gga gtc gca aat gcc ctc 2256
 Gln Leu Ala Leu Ala Thr Trp Thr Ile Gln Gly Val Ala Asn Ala Leu
 740 745 750
 tct ggt gac att tgg aat att gac aat gag ttt taa 2292
 Ser Gly Asp Ile Trp Asn Ile Asp Asn Glu Phe
 755 760

<210> 774

<211> 763

<212> PRT

<213> Mus musculus

<400> 774

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Asn Ser His Val Glu Met Lys Leu Ala Ala Asp Glu Glu Glu Asn Ala
          35             40             45
Asp Asn Asn Met Lys Ala Ser Val Arg Lys Pro Lys Arg Phe Asn Gly
          50             55             60
Arg Leu Cys Phe Ala Ala Ile Ala Leu Val Ile Phe Phe Leu Ile Gly
          65             70             75             80
Phe Met Ser Gly Tyr Leu Gly Tyr Cys Lys Arg Val Glu Gln Lys Glu
          85             90             95
Glu Cys Val Lys Leu Ala Glu Thr Glu Glu Thr Asp Lys Ser Glu Thr
          100            105            110
Met Glu Thr Glu Asp Val Pro Thr Ser Ser Arg Leu Tyr Trp Ala Asp
          115            120            125
Leu Lys Thr Leu Leu Ser Glu Lys Leu Asn Ser Ile Glu Phe Ala Asp
          130            135            140
Thr Ile Lys Gln Leu Ser Gln Asn Thr Tyr Thr Pro Arg Glu Ala Gly
          145            150            155            160
Ser Gln Lys Asp Glu Ser Leu Ala Tyr Tyr Ile Glu Asn Gln Phe His
          165            170            175

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Glu Phe Lys Phe Ser Lys Val Trp Arg Asp Glu His Tyr Val Lys Ile
 180 185 190
 Gln Val Lys Ser Ser Ile Gly Gln Asn Met Val Thr Ile Val Gln Ser
 195 200 205
 Asn Gly Asn Leu Asp Pro Val Glu Ser Pro Glu Gly Tyr Val Ala Phe
 210 215 220
 Ser Lys Pro Thr Glu Val Ser Gly Lys Leu Val His Ala Asn Phe Gly
 225 230 235 240
 Thr Lys Lys Asp Phe Glu Glu Leu Ser Tyr Ser Val Asn Gly Ser Leu
 245 250 255
 Val Ile Val Arg Ala Gly Glu Ile Thr Phe Ala Glu Lys Val Ala Asn
 260 265 270
 Ala Gln Ser Phe Asn Ala Ile Gly Val Leu Ile Tyr Met Asp Lys Asn
 275 280 285
 Lys Phe Pro Val Val Glu Ala Asp Leu Ala Leu Phe Gly His Ala His
 290 295 300
 Leu Gly Thr Gly Asp Pro Tyr Thr Pro Gly Phe Pro Ser Phe Asn His
 305 310 315 320
 Thr Gln Phe Pro Pro Ser Gln Ser Ser Gly Leu Pro Asn Ile Pro Val
 325 330 335
 Gln Thr Ile Ser Arg Ala Ala Ala Glu Lys Leu Phe Gly Lys Met Glu
 340 345 350
 Gly Ser Cys Pro Ala Arg Trp Asn Ile Asp Ser Ser Cys Lys Leu Glu
 355 360 365
 Leu Ser Gln Asn Gln Asn Val Lys Leu Ile Val Lys Asn Val Leu Lys
 370 375 380
 Glu Arg Arg Ile Leu Asn Ile Phe Gly Val Ile Lys Gly Tyr Glu Glu
 385 390 395 400
 Pro Asp Arg Tyr Val Val Val Gly Ala Gln Arg Asp Ala Leu Gly Ala

	405	410	415
Gly Val Ala Ala Lys Ser Ser Val Gly Thr Gly Leu Leu Leu Lys Leu			
	420	425	430
Ala Gln Val Phe Ser Asp Met Ile Ser Lys Asp Gly Phe Arg Pro Ser			
	435	440	445
Arg Ser Ile Ile Phe Ala Ser Trp Thr Ala Gly Asp Phe Gly Ala Val			
	450	455	460
Gly Ala Thr Glu Trp Leu Glu Gly Tyr Leu Ser Ser Leu His Leu Lys			
465	470	475	480
Ala Phe Thr Tyr Ile Asn Leu Asp Lys Val Val Leu Gly Thr Ser Asn			
	485	490	495
Phe Lys Val Ser Ala Ser Pro Leu Leu Tyr Thr Leu Met Gly Lys Ile			
	500	505	510
Met Gln Asp Val Lys His Pro Val Asp Gly Lys Ser Leu Tyr Arg Asp			
	515	520	525
Ser Asn Trp Ile Ser Lys Val Glu Lys Leu Ser Phe Asp Asn Ala Ala			
	530	535	540
Tyr Pro Phe Leu Ala Tyr Ser Gly Ile Pro Ala Val Ser Phe Cys Phe			
545	550	555	560
Cys Glu Asp Ala Asp Tyr Pro Tyr Leu Gly Thr Arg Leu Asp Thr Tyr			
	565	570	575
Glu Ala Leu Thr Gln Lys Val Pro Gln Leu Asn Gln Met Val Arg Thr			
	580	585	590
Ala Ala Glu Val Ala Gly Gln Leu Ile Ile Lys Leu Thr His Asp Val			
	595	600	605
Glu Leu Asn Leu Asp Tyr Glu Met Tyr Asn Ser Lys Leu Leu Ser Phe			
	610	615	620
Met Lys Asp Leu Asn Gln Phe Lys Thr Asp Ile Arg Asp Met Gly Leu			
625	630	635	640

Ser Leu Gln Trp Leu Tyr Ser Ala Arg Gly Asp Tyr Phe Arg Ala Thr
 645 650 655
 Ser Arg Leu Thr Thr Asp Phe His Asn Ala Glu Lys Thr Asn Arg Phe
 660 665 670
 Val Met Arg Glu Ile Asn Asp Arg Ile Met Lys Val Glu Tyr His Phe
 675 680 685
 Leu Ser Pro Tyr Val Ser Pro Arg Glu Ser Pro Phe Arg His Ile Phe
 690 695 700
 Trp Gly Ser Gly Ser His Thr Leu Ser Ala Leu Val Glu Asn Leu Lys
 705 710 715 720
 Leu Arg Gln Lys Asn Ile Thr Ala Phe Asn Glu Thr Leu Phe Arg Asn
 725 730 735
 Gln Leu Ala Leu Ala Thr Trp Thr Ile Gln Gly Val Ala Asn Ala Leu
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 Ser Gly Asp Ile Trp Asn Ile Asp Asn Glu Phe
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<210> 775

<211> 991

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (67).. (753)

<400> 775

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Met Ser Val Ser Glu Ile Phe Val Glu Leu Gln Gly Phe Leu

1 5 10

gct gcc gag cag gac atc cga gag gaa ata cga aaa gtt gta cag agt 156

Ala Ala Glu Gln Asp Ile Arg Glu Glu Ile Arg Lys Val Val Gln Ser

15 20 25 30

tta gaa caa act gct cga gag att ttg acc cta ctt caa ggg gtc cac 204

Leu Glu Gln Thr Ala Arg Glu Ile Leu Thr Leu Leu Gln Gly Val His

35 40 45

cag ggt act gga ttt cag gac att cca aag agg tgc ttg aaa gcg aga 252

Gln Gly Thr Gly Phe Gln Asp Ile Pro Lys Arg Cys Leu Lys Ala Arg

50 55 60

gaa cat ttc agt aca gta aaa aca cat ctc acg tcc ctg aag acc aag 300

Glu His Phe Ser Thr Val Lys Thr His Leu Thr Ser Leu Lys Thr Lys

65 70 75

ttc ccc gct gag cag tat tac agg ttt cat gag cat tgg cgg ttc gtg 348

Phe Pro Ala Glu Gln Tyr Tyr Arg Phe His Glu His Trp Arg Phe Val

80 85 90

ctt cag cgc ctg gtc ttc ctg gca gca ttt gtg gta tat ttg gaa aca 396

Leu Gln Arg Leu Val Phe Leu Ala Ala Phe Val Val Tyr Leu Glu Thr

95 100 105 110

gag acc ctg gtg acc cga gag gct gtt aca gag att ctt ggc att gaa 444

Glu Thr Leu Val Thr Arg Glu Ala Val Thr Glu Ile Leu Gly Ile Glu

115 120 125

cca gat cgg gaa aaa ggg ttt cat ctg gat gtg gaa gat tat ctc tca 492

Pro Asp Arg Glu Lys Gly Phe His Leu Asp Val Glu Asp Tyr Leu Ser

130 135 140

gga gtt tta att ctt gcc agt gaa ctg tcg agg ctg tct gtc aac agt 540

Gly Val Leu Ile Leu Ala Ser Glu Leu Ser Arg Leu Ser Val Asn Ser

145 150 155

gtc act gct gga gac tac tct cgg ccc ctt cac att tct act ttc atc 588
 Val Thr Ala Gly Asp Tyr Ser Arg Pro Leu His Ile Ser Thr Phe Ile
 160 165 170
 aat gag ctg gat tct ggt ttt cgt ctt ctc aat ctg aaa aat gac tcc 636
 Asn Glu Leu Asp Ser Gly Phe Arg Leu Leu Asn Leu Lys Asn Asp Ser
 175 180 185 190
 ctg agg aag cgc tac gac ggc ttg aag tac gat gtg aag aaa gta gag 684
 Leu Arg Lys Arg Tyr Asp Gly Leu Lys Tyr Asp Val Lys Lys Val Glu
 195 200 205
 gag gtg gtc tat gac ctt tcc atc cga ggc ttc aat aag gag aca gca 732
 Glu Val Val Tyr Asp Leu Ser Ile Arg Gly Phe Asn Lys Glu Thr Ala
 210 215 220
 gcg gct tgt ggt gaa aaa tag gagcttttcc ctggggctgg ccttgctggc 783
 Ala Ala Cys Gly Glu Lys
 225
 gctgcagttg ccaggaggagg ctagctcagt gcctcttcct gtagttagca caccagttgc 843
 taaacaactg cgctttatit tcgtaaccag ctgigtgctg tgagtgtcag aattgaaata 903
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<210> 776

<211> 583

<212> PRT

<213> Mus musculus

<400> 776

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 Glu Gln Asp Ile Arg Glu Glu Ile Arg Lys Val Val Gln Ser Leu Glu

	20		25		30
Gln Thr Ala Arg Glu Ile Leu Thr Leu Leu Gln Gly Val His Gln Gly					
	35		40		45
Thr Gly Phe Gln Asp Ile Pro Lys Arg Cys Leu Lys Ala Arg Glu His					
	50		55		60
Phe Ser Thr Val Lys Thr His Leu Thr Ser Leu Lys Thr Lys Phe Pro					
	65		70		75
					80
Ala Glu Gln Tyr Tyr Arg Phe His Glu His Trp Arg Phe Val Leu Gln					
		85		90	
					95
Arg Leu Val Phe Leu Ala Ala Phe Val Val Tyr Leu Glu Thr Glu Thr					
	100		105		110
Leu Val Thr Arg Glu Ala Val Thr Glu Ile Leu Gly Ile Glu Pro Asp					
	115		120		125
Arg Glu Lys Gly Phe His Leu Asp Val Glu Asp Tyr Leu Ser Gly Val					
	130		135		140
Leu Ile Leu Ala Ser Glu Leu Ser Arg Leu Ser Val Asn Ser Val Thr					
	145		150		155
					160
Ala Gly Asp Tyr Ser Arg Pro Leu His Ile Ser Thr Phe Ile Asn Glu					
		165		170	
					175
Leu Asp Ser Gly Phe Arg Leu Leu Asn Leu Lys Asn Asp Ser Leu Arg					
	180		185		190
Lys Arg Tyr Asp Gly Leu Lys Tyr Asp Val Lys Lys Val Glu Glu Val					
	195		200		205
Val Tyr Asp Leu Ser Ile Arg Gly Phe Asn Lys Glu Thr Ala Ala Ala					
	210		215		220
Cys Gly Glu Lys					
225					

<210> 777

<211> 213

<212> DNA

<213> Mus musculus

<400> 777

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 ttgaaatatt ccgaatgagg gagaagcagg tacctgtiga tgttgttgag atgagagaaa 120
 ccatcatagc ctttgcttgg gaacccaatg gcagtaagtt tgccgtgctt catggtgagg 180
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<210> 778

<211> 1068

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (143).. (751)

<400> 778

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 taataacaat tgggtgttgtt ttcttcctgg ccggtcgtga gaacgcgtct aataacaatt 120
 atttatatga gaaaaggatt cg atg atc ttt gac tgt act gag tgt tat gat 172

Met Ile Phe Asp Cys Thr Glu Cys Tyr Asp

1

5

10

cca gtt act aaa caa tgg aca act gtt gct tca atg aat cac ccc cgc 220

Pro Val Thr Lys Gln Trp Thr Thr Val Ala Ser Met Asn His Pro Arg

15

20

25

tgt gga ttg gga gta tgt gtg tgc tac ggg gca atc tat gct ttg ggt 268

Cys Gly Leu Gly Val Cys Val Cys Tyr Gly Ala Ile Tyr Ala Leu Gly	
30 35 40	
ggg tgg gtt gga gct gag atc ggc aac acc att gag cgg ttt gat cct	316
Gly Trp Val Gly Ala Glu Ile Gly Asn Thr Ile Glu Arg Phe Asp Pro	
45 50 55	
gat gag aat aag tgg gaa gtg gtg ggc agc atg gca gtg tca cgc tac	364
Asp Glu Asn Lys Trp Glu Val Val Gly Ser Met Ala Val Ser Arg Tyr	
60 65 70	
tac ttt ggg tgc tgt gag atg caa ggt tta att tat gca gtt gga gga	412
Tyr Phe Gly Cys Cys Glu Met Gln Gly Leu Ile Tyr Ala Val Gly Gly	
75 80 85 90	
atc agc aat gag ggg cta gag ctc cgt tcc ttt gag gtt tat gat cca	460
Ile Ser Asn Glu Gly Leu Glu Leu Arg Ser Phe Glu Val Tyr Asp Pro	
95 100 105	
ctt tcc aag cgc tgg tct cca ctt cct cct atg gga acc aga aga gcg	508
Leu Ser Lys Arg Trp Ser Pro Leu Pro Pro Met Gly Thr Arg Arg Ala	
110 115 120	
tat ctt ggg gtg gca gca ctc aat gac tgc atc tat gct att gga ggg	556
Tyr Leu Gly Val Ala Ala Leu Asn Asp Cys Ile Tyr Ala Ile Gly Gly	
125 130 135	
tgg aat gag aca caa gat gcc ctt cat act gta gaa aag tac tcc ttc	604
Trp Asn Glu Thr Gln Asp Ala Leu His Thr Val Glu Lys Tyr Ser Phe	
140 145 150	
gaa gag gaa aag tgg gtt gaa gtt gct tca atg aaa gtt cct aga gca	652
Glu Glu Glu Lys Trp Val Glu Val Ala Ser Met Lys Val Pro Arg Ala	
155 160 165 170	
ggc atg tgt gct gtg aca gtc aat ggt ctt ctg tat gtc tct gga ggc	700
Gly Met Cys Ala Val Thr Val Asn Gly Leu Leu Tyr Val Ser Gly Gly	
175 180 185	

cgg tct tct agc cat gat ttc ttg gcc cca ggt act ttc gga ctc agt 748
 Arg Ser Ser Ser His Asp Phe Leu Ala Pro Gly Thr Phe Gly Leu Ser
 190 195 200
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 atttgcaaaa cttaaaaaaa aaaaaaa 1068

<210> 779

<211> 202

<212> PRT

<213> Mus musculus

<400> 779

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 35 40 45
 Ile Gly Asn Thr Ile Glu Arg Phe Asp Pro Asp Glu Asn Lys Trp Glu
 50 55 60
 Val Val Gly Ser Met Ala Val Ser Arg Tyr Tyr Phe Gly Cys Cys Glu
 65 70 75 80
 Met Gln Gly Leu Ile Tyr Ala Val Gly Gly Ile Ser Asn Glu Gly Leu
 85 90 95

Glu Leu Arg Ser Phe Glu Val Tyr Asp Pro Leu Ser Lys Arg Trp Ser
 100 105 110
 Pro Leu Pro Pro Met Gly Thr Arg Arg Ala Tyr Leu Gly Val Ala Ala
 115 120 125
 Leu Asn Asp Cys Ile Tyr Ala Ile Gly Gly Trp Asn Glu Thr Gln Asp
 130 135 140
 Ala Leu His Thr Val Glu Lys Tyr Ser Phe Glu Glu Glu Lys Trp Val
 145 150 155 160
 Glu Val Ala Ser Met Lys Val Pro Arg Ala Gly Met Cys Ala Val Thr
 165 170 175
 Val Asn Gly Leu Leu Tyr Val Ser Gly Gly Arg Ser Ser Ser His Asp
 180 185 190
 Phe Leu Ala Pro Gly Thr Phe Gly Leu Ser
 195 200

<210> 780

<211> 1070

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (34).. (324)

<400> 780

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1

5

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Ala Asp Gly Ala Ala Lys Ala Glu Pro Lys Arg Arg Ser Ala Arg Leu
 10 15 20
 tcg gcc aag ccc gcc cct gcc aag gtg gac gcg aag ccg aaa aag gcc 150
 Ser Ala Lys Pro Ala Pro Ala Lys Val Asp Ala Lys Pro Lys Lys Ala
 25 30 35
 gcg gga aag gat aaa gca tca gac aaa aaa gtg cag ata aaa ggg aag 198
 Ala Gly Lys Asp Lys Ala Ser Asp Lys Lys Val Gln Ile Lys Gly Lys
 40 45 50 55
 agg gga gcg aag ggc aaa cag gct gac gtg gct gac cag caa acc aca 246
 Arg Gly Ala Lys Gly Lys Gln Ala Asp Val Ala Asp Gln Gln Thr Thr
 60 65 70
 gag ctg cct gca gaa aat gga gag acg gaa aac cag agt cca gcc tct 294
 Glu Leu Pro Ala Glu Asn Gly Glu Thr Glu Asn Gln Ser Pro Ala Ser
 75 80 85
 gaa gaa gag aaa gaa gct aag tcc gac taa gcatccatca cgtctgtcag 344
 Glu Glu Glu Lys Glu Ala Lys Ser Asp
 90 95
 tgggtccgcc tcccttcttg tacaatccag aggaatat tttatcaacta ttttgtaa 404
 gcgagtttt tagtagctct agaaacattt ttaaaagggtg aggggatccc acctatctc 464
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atgtct

1070

<210> 781

<211> 96

<212> PRT

<213> Mus musculus

<400> 781

Met Pro Lys Arg Lys Val Ser Ala Asp Gly Ala Ala Lys Ala Glu Pro

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Lys Arg Arg Ser Ala Arg Leu Ser Ala Lys Pro Ala Pro Ala Lys Val

20 25 30

Asp Ala Lys Pro Lys Lys Ala Ala Gly Lys Asp Lys Ala Ser Asp Lys

35 40 45

Lys Val Gln Ile Lys Gly Lys Arg Gly Ala Lys Gly Lys Gln Ala Asp

50 55 60

Val Ala Asp Gln Gln Thr Thr Glu Leu Pro Ala Glu Asn Gly Glu Thr

65 70 75 80

Glu Asn Gln Ser Pro Ala Ser Glu Glu Glu Lys Glu Ala Lys Ser Asp

85 90 95

<210> 782

<211> 272

<212> DNA

<213> Mus musculus

<400> 782

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tacgacgatt acaactgaaa gatctgtgat gccatgaaca gtgaccatgc acgtgttc 180

gctggtgatg ataattgtgt gagctgcgtt ggggtacaca catgatgtaa taggagtgga 240

tacaggctac tgggacttat tcctctacat ct 272

<210> 783

<211> 311

<212> DNA

<213> Mus musculus

<400> 783

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acagagactc tgcgtgtaca agatgggtgga gtacaaagcg aagcgacatg catcttgagg 180

acctgtggat agtggcccag agtatcatca agatctggac agagagcttg atagactgag 240

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<211> 3769

<212> DNA

<213> Mus musculus

<400> 784

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ctaaacactc cacagtccac ttgggagcca gaagaccatc tccctgagtc atccctgcct 180
aggcggctgc tcacctgac cctggagggtg agcactgcca agctaacagc tttcgtggct 240
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aaggaggtag aggtgcagct tctgcctgag ctagaagaga tgatccttca caggaacccc 420
ttccctgcgc tgcagaccct ccgcaatcgg gtttggcttc tttccctcgg atcagtctca 480
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<211> 637

<212> DNA

<213> Mus musculus

<400> 785

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<210> 786

<211> 498

<212> DNA

<213> Mus musculus

<400> 786

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<210> 787

<211> 1478

<212> DNA

<213> Mus musculus

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<222> (316).. (1122)

<400> 787

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cccagtcctt ccccgctccg tctccgaccc actggggccg gggcgggctt gcgcgtcagc 240
tggggctaga aaaggcggcg gtccggcccc gcgaggtgac agccaacttg gacgccaggt 300
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 Met Ser Ala Ala Leu Phe Ser Leu Asp Ser Pro Val
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 cgc ggc aca ccc tgg ccc aca gaa ccc gcg gcc ttc tac gag cca ggc 399
 Arg Gly Thr Pro Trp Pro Thr Glu Pro Ala Ala Phe Tyr Glu Pro Gly
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 Arg Val Asp Lys Pro Gly Arg Gly Pro Glu Pro Gly Glu Leu Gly Glu
 30 35 40
 ctg ggc tcc acg act cct gcc atg tac gac gac gag agc gcc atc gac 495
 Leu Gly Ser Thr Thr Pro Ala Met Tyr Asp Asp Glu Ser Ala Ile Asp
 45 50 55 60
 ttc agc gcc tac att gac tcc atg gcc gcc gtg ccc acc cta gag ctg 543
 Phe Ser Ala Tyr Ile Asp Ser Met Ala Ala Val Pro Thr Leu Glu Leu
 65 70 75
 tgc cac gac gaa ctc ttc gcc gac ctc ttc aac agc aac cac aaa gcg 591
 Cys His Asp Glu Leu Phe Ala Asp Leu Phe Asn Ser Asn His Lys Ala
 80 85 90
 gcc ggc gcg ggc ggc ctg gag ctg ctg cag ggc ggc cct acg cga ccc 639
 Ala Gly Ala Gly Gly Leu Glu Leu Leu Gln Gly Gly Pro Thr Arg Pro
 95 100 105
 ccg ggt gtg ggg tct gtc gct agg ggg ccg ctc aag cgc gaa ccc gac 687
 Pro Gly Val Gly Ser Val Ala Arg Gly Pro Leu Lys Arg Glu Pro Asp
 110 115 120
 tgg ggc gac ggc gac gcg ccg ggc tcc ctg ctg ccg gcg caa gtg gcg 735
 Trp Gly Asp Gly Asp Ala Pro Gly Ser Leu Leu Pro Ala Gln Val Ala
 125 130 135 140
 gtg tgc gcg cag aca gtg gtg agc ttg gcg gcc gcg gct cag ccc act 783
 Val Cys Ala Gln Thr Val Val Ser Leu Ala Ala Ala Ala Gln Pro Thr

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Ala Pro Gly Thr Val Arg Glu Lys Gly Ala Gly Lys Arg Gly Pro Asp			
175	180	185	
cgc ggc agc ccg gag tac cgg cag cgg cgc gag cgc aac aac atc gct	927		
Arg Gly Ser Pro Glu Tyr Arg Gln Arg Arg Glu Arg Asn Asn Ile Ala			
190	195	200	
gtg cgc aag agc cgc gac aag gcc aag cgc cgc aac cag gag atg cag	975		
Val Arg Lys Ser Arg Asp Lys Ala Lys Arg Arg Asn Gln Glu Met Gln			
205	210	215	220
cag aag ctg gtg gag ttg tgc gcc gag aac gag aag ctg cat cag cgc	1023		
Gln Lys Leu Val Glu Leu Ser Ala Glu Asn Glu Lys Leu His Gln Arg			
225	230	235	
gtg gag cag ctc acc cgg gac ctg gct ggc ctc cgg cag ttc ttc aaa	1071		
Val Glu Gln Leu Thr Arg Asp Leu Ala Gly Leu Arg Gln Phe Phe Lys			
240	245	250	
aaa ctg ccc agc ccg cct ttc ctg ccg ccc acc ggc gcc gac tgc cgg	1119		
Lys Leu Pro Ser Pro Pro Phe Leu Pro Pro Thr Gly Ala Asp Cys Arg			
255	260	265	
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1478

<210> 788

<211> 268

<212> PRT

<213> Mus musculus

<400> 788

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 35 40 45
 Thr Pro Ala Met Tyr Asp Asp Glu Ser Ala Ile Asp Phe Ser Ala Tyr
 50 55 60
 Ile Asp Ser Met Ala Ala Val Pro Thr Leu Glu Leu Cys His Asp Glu
 65 70 75 80
 Leu Phe Ala Asp Leu Phe Asn Ser Asn His Lys Ala Ala Gly Ala Gly
 85 90 95
 Gly Leu Glu Leu Leu Gln Gly Gly Pro Thr Arg Pro Pro Gly Val Gly
 100 105 110
 Ser Val Ala Arg Gly Pro Leu Lys Arg Glu Pro Asp Trp Gly Asp Gly
 115 120 125
 Asp Ala Pro Gly Ser Leu Leu Pro Ala Gln Val Ala Val Cys Ala Gln
 130 135 140
 Thr Val Val Ser Leu Ala Ala Ala Ala Gln Pro Thr Pro Pro Thr Ser
 145 150 155 160
 Pro Glu Pro Pro Arg Gly Ser Pro Gly Pro Ser Leu Ala Pro Gly Thr

165	170	175
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Glu Tyr Arg Gln Arg Arg Glu Arg Asn Asn Ile Ala Val Arg Lys Ser		
195	200	205
Arg Asp Lys Ala Lys Arg Arg Asn Gln Glu Met Gln Gln Lys Leu Val		
210	215	220
Glu Leu Ser Ala Glu Asn Glu Lys Leu His Gln Arg Val Glu Gln Leu		
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<211> 3244

<212> DNA

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<220>

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<222> (590).. (2515)

<400> 789

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Met Thr Thr

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5

10

15

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 Gly Pro Pro Ser Phe Pro His His Arg Ala Thr Leu Arg Leu Ser Glu

20

25

30

35

aag ttt atc ctt ctc ctc atc ctt agt gcc ttc atc acc ctg tgt ttt 742
 Lys Phe Ile Leu Leu Leu Ile Leu Ser Ala Phe Ile Thr Leu Cys Phe

40

45

50

ggg gca ttc ttc ttc ctt cca gac tct tca aaa cac aaa cgc ttt gat 790
 Gly Ala Phe Phe Phe Leu Pro Asp Ser Ser Lys His Lys Arg Phe Asp

55

60

65

ctg ggc tta gaa gat gtg tta att cct cac gta gat gcc ggc aaa gga 838
 Leu Gly Leu Glu Asp Val Leu Ile Pro His Val Asp Ala Gly Lys Gly

70

75

80

gct aaa aac ccc ggc gtc ttc ctg atc cat gga ccc gac gaa cac aga 886
 Ala Lys Asn Pro Gly Val Phe Leu Ile His Gly Pro Asp Glu His Arg

85

90

95

cac agg gaa gaa gaa gag cgt ctg aga aat aag att aga gct gac cat 934
 His Arg Glu Glu Glu Glu Arg Leu Arg Asn Lys Ile Arg Ala Asp His

100

105

110

115

gag aaa gcc ctg gaa gaa gca aaa gaa aaa tta aga aag tca aga gag 982

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 135 140 145
 atg aag aca aaa gag acc agg gta ctg ccg cct gtc cct gtc cca caa 1078
 Met Lys Thr Lys Glu Thr Arg Val Leu Pro Pro Val Pro Val Pro Gln
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 165 170 175
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 Pro Asn Gly Leu Tyr Pro Asn Tyr Leu Asn Pro Arg Thr Gly Arg Trp
 375 380 385
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 Tyr Leu Leu Lys Ala Trp Leu Thr Ser Asp Lys Thr Asp His Glu Ala
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Lys Lys Ser Arg Gly Gly Leu Val Phe Ile Gly Glu Trp Lys Asn Gly				
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<400> 790

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 Leu Ser Glu Lys Phe Ile Leu Leu Leu Ile Leu Ser Ala Phe Ile Thr
 35 40 45
 Leu Cys Phe Gly Ala Phe Phe Phe Leu Pro Asp Ser Ser Lys His Lys
 50 55 60
 Arg Phe Asp Leu Gly Leu Glu Asp Val Leu Ile Pro His Val Asp Ala
 65 70 75 80
 Gly Lys Gly Ala Lys Asn Pro Gly Val Phe Leu Ile His Gly Pro Asp
 85 90 95
 Glu His Arg His Arg Glu Glu Glu Glu Arg Leu Arg Asn Lys Ile Arg
 100 105 110
 Ala Asp His Glu Lys Ala Leu Glu Glu Ala Lys Glu Lys Leu Arg Lys
 115 120 125
 Ser Arg Glu Glu Ile Arg Ala Glu Ile Gln Thr Glu Lys Asn Lys Val
 130 135 140
 Ala Gln Ala Met Lys Thr Lys Glu Thr Arg Val Leu Pro Pro Val Pro
 145 150 155 160
 Val Pro Gln Arg Val Gly Val Ser Gly Gly Asp Pro Glu Asp Met Glu
 165 170 175
 Ile Lys Lys Lys Arg Asp Lys Ile Lys Glu Met Met Lys His Ala Trp
 180 185 190
 Asp Asn Tyr Arg Thr Tyr Gly Trp Gly His Asn Glu Leu Arg Pro Ile
 195 200 205
 Ala Arg Lys Gly His Ser Thr Asn Ile Phe Gly Ser Ser Gln Met Gly

210	215	220
Ala Thr Ile Val Asp	Ala Leu Asp Thr Leu Tyr Ile Met Gly Leu His	
225	230	235
Asp Glu Phe Met Asp Gly Gln Arg Trp Ile Glu Glu Asn Leu Asp Phe		240
245	250	255
Ser Val Asn Ser Glu Val Ser Val Phe Glu Val Asn Ile Arg Phe Ile		
260	265	270
Gly Gly Leu Leu Ala Ala Tyr Tyr Leu Ser Gly Glu Glu Ile Phe Lys		
275	280	285
Thr Lys Ala Val Gln Leu Ala Glu Lys Leu Leu Pro Ala Phe Asn Thr		
290	295	300
Pro Thr Gly Ile Pro Trp Ala Met Val Asn Leu Lys Ser Gly Val Gly		
305	310	315
Arg Asn Trp Gly Trp Ala Ser Ala Gly Ser Ser Ile Leu Ala Glu Phe		320
325	330	335
Gly Thr Leu His Met Glu Phe Val His Leu Ser Tyr Leu Thr Gly Asp		
340	345	350
Leu Thr Tyr Tyr Asn Lys Val Met His Ile Arg Lys Leu Leu Gln Lys		
355	360	365
Met Glu Arg Pro Asn Gly Leu Tyr Pro Asn Tyr Leu Asn Pro Arg Thr		
370	375	380
Gly Arg Trp Gly Gln Tyr His Thr Ser Val Gly Gly Leu Gly Asp Ser		
385	390	395
Phe Tyr Glu Tyr Leu Leu Lys Ala Trp Leu Thr Ser Asp Lys Thr Asp		400
405	410	415
His Glu Ala Arg Arg Met Tyr Asp Asp Ala Val Glu Ala Ile Glu Lys		
420	425	430
His Leu Ile Lys Lys Ser Arg Gly Gly Leu Val Phe Ile Gly Glu Trp		
435	440	445

Lys Asn Gly His Leu Glu Arg Lys Met Gly His Leu Ala Cys Phe Ala
 450 455 460
 Gly Gly Met Leu Ala Leu Gly Ala Asp Gly Ser Arg Lys Asp Lys Ala
 465 470 475 480
 Gly His Tyr Leu Glu Leu Gly Ala Glu Ile Ala Arg Thr Cys His Glu
 485 490 495
 Ser Tyr Asp Arg Thr Ala Leu Lys Leu Gly Pro Glu Ser Phe Lys Phe
 500 505 510
 Asp Gly Ala Val Glu Ala Val Ala Val Arg Gln Ala Glu Lys Tyr Tyr
 515 520 525
 Ile Leu Arg Pro Glu Val Ile Glu Thr Tyr Trp Tyr Leu Trp Arg Phe
 530 535 540
 Thr His Asp Pro Arg Tyr Arg Gln Trp Gly Trp Glu Ala Ala Leu Ala
 545 550 555 560
 Ile Glu Lys Ser Cys Arg Val Ser Gly Gly Phe Ser Gly Val Lys Asp
 565 570 575
 Val Tyr Ala Pro Thr Pro Val His Asp Asp Val Gln Gln Ser Phe Ser
 580 585 590
 Leu Ala Glu Thr Leu Lys Tyr Leu Tyr Leu Leu Phe Ser Gly Asp Asp
 595 600 605
 Leu Leu Pro Leu Asp His Trp Val Phe Asn Thr Glu Ala His Pro Leu
 610 615 620
 Pro Val Leu Arg Leu Ala Asn Ser Thr Leu Ser Gly Asn Pro Ala Val
 625 630 635 640
 Arg

<210> 791

<211> 416

<212> DNA

<213> Mus musculus

<400> 791

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gatcctgtct ggagggagga tgciggaag tatcaatgtg aggtctccaa cccagtcagt 180
tcaaagtcca gctctccagt cctgttggt gtgatagaag agtgacctct ctctctcat 240
cctacagcag agtggagtc tttccttatt gatgggtgc aaaatggaga tgagtcaagt 300
ggtaaaagt gtcagttacc actcaagtac tgccttcatt gtaactcata cctgtagtcc 360
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<210> 792

<211> 567

<212> DNA

<213> Mus musculus

<400> 792

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agttctacat ccagtcacaa gcaggatgtt ggtatttctg cagcatttct ggctgatgtc 180
cggcccaaaa cggatggctg taatggctg agatataatt taacttctga tatcattgaa 240
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aaaacaatgg tticattagg agtgaaaaac caatgctaga ttgacatcg ttggaagatt 480
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aggagatag taatgtgca tcatcaa 567

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<210> 793

<211> 1093

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (14).. (859)

<400> 793

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              1              5              10
gcc gga ctg ctg ctc ctg ctc ctg ccc ctc tcc tct tcc tcc tct tgc      97
Ala Gly Leu Leu Leu Leu Leu Leu Pro Leu Ser Ser Ser Ser Ser Ser
      15              20              25
gat gcc tgc ggc ccg tgc gtg ccg gcc tcc tgc ccc gcg ctg ccc cgg      145
Asp Ala Cys Gly Pro Cys Val Pro Ala Ser Cys Pro Ala Leu Pro Arg
      30              35              40
ctc ggc tgc ccg ctg ggt gag acc cgc gac gcg tgc ggg tgc tgc ccg      193
Leu Gly Cys Pro Leu Gly Glu Thr Arg Asp Ala Cys Gly Cys Cys Pro
      45              50              55              60
gtg tgt gct cgc ggc gag ggt gag ccg tgc ggg ggc ggc gcg gcc ggc      241
Val Cys Ala Arg Gly Glu Gly Glu Pro Cys Gly Gly Gly Ala Ala Gly
              65              70              75
agg ggg cac tgc gcg ccg ggc atg gag tgc gtg aag agc cgc aag agg      289
Arg Gly His Cys Ala Pro Gly Met Glu Cys Val Lys Ser Arg Lys Arg
              80              85              90
cgg agg ggt aaa gcc ggg gca gca gcc ggc ggt ccc gcg acc ctc gcc      337
Arg Arg Gly Lys Ala Gly Ala Ala Ala Gly Gly Pro Ala Thr Leu Ala

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95	100	105	
gtg tgc gtg tgc aag agc cgc tac ccg gtg tgc ggc agc aac ggc atc	385		
Val Cys Val Cys Lys Ser Arg Tyr Pro Val Cys Gly Ser Asn Gly Ile			
110	115	120	
acc tac ccc agc ggc tgc cag ctg cgc gct gcc agc ctg cgc gcc gag	433		
Thr Tyr Pro Ser Gly Cys Gln Leu Arg Ala Ala Ser Leu Arg Ala Glu			
125	130	135	140
agc cgc ggg gag aag ccc atc acc cag gtc agc aag ggc acc tgc gag	481		
Ser Arg Gly Glu Lys Pro Ile Thr Gln Val Ser Lys Gly Thr Cys Glu			
145	150	155	
caa ggt cct tcc ata gtg acg ccc ccc aag gac atc tgg aac gtc act	529		
Gln Gly Pro Ser Ile Val Thr Pro Pro Lys Asp Ile Trp Asn Val Thr			
160	165	170	
ggt gcc aag gtg ttc ttg agc tgt gag gtc atc ggg atc cca acc cct	577		
Gly Ala Lys Val Phe Leu Ser Cys Glu Val Ile Gly Ile Pro Thr Pro			
175	180	185	
gtc ctc atc tgg aac aag gta aaa agg gat cac tct gga gtt cag cgg	625		
Val Leu Ile Trp Asn Lys Val Lys Arg Asp His Ser Gly Val Gln Arg			
190	195	200	
aca gaa ctc ttg cct ggt gac cgg gaa aat ctg gcc att cag acc cgg	673		
Thr Glu Leu Leu Pro Gly Asp Arg Glu Asn Leu Ala Ile Gln Thr Arg			
205	210	215	220
ggt ggt cca gaa aag cat gaa gta acg ggc tgg gtg ctg gta tct cct	721		
Gly Gly Pro Glu Lys His Glu Val Thr Gly Trp Val Leu Val Ser Pro			
225	230	235	
cta agt aag gag gac gct gga gag tat gag tgc cac gca tcc aac tcc	769		
Leu Ser Lys Glu Asp Ala Gly Glu Tyr Glu Cys His Ala Ser Asn Ser			
240	245	250	

caa ggg cag gct tcc gcg gca gcc aaa att aca gtg gtt gat gcc ctc 817

Gln Gly Gln Ala Ser Ala Ala Ala Lys Ile Thr Val Val Asp Ala Leu

255

260

265

cat gaa ata cca ctg aaa aaa ggt gaa ggt gct cag tta taa 859

His Glu Ile Pro Leu Lys Lys Gly Glu Gly Ala Gln Leu

270

275

280

cctgcgaatc catgagcctc ttagctaaag gtgctctcag acagccgaca gctataaccc 919

tgctcttgcc tgacacactt ccttaacct aaccactaa cactttatta cagccagctg 979

gttttacaca gagaaatcaa agataacaca tcaagactat ctacaaaaat ttattattta 1039

cagaaaaaag cacatgtagc tttaaaca aa acaataaaa ttcttatcac aaca 1093

<210> 794

<211> 281

<212> PRT

<213> Mus musculus

<400> 794

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1

5

10

15

Leu Leu Leu Leu Pro Leu Ser Ser Ser Ser Ser Ser Asp Ala Cys Gly

20

25

30

Pro Cys Val Pro Ala Ser Cys Pro Ala Leu Pro Arg Leu Gly Cys Pro

35

40

45

Leu Gly Glu Thr Arg Asp Ala Cys Gly Cys Cys Pro Val Cys Ala Arg

50

55

60

Gly Glu Gly Glu Pro Cys Gly Gly Gly Ala Ala Gly Arg Gly His Cys

65

70

75

80

Ala Pro Gly Met Glu Cys Val Lys Ser Arg Lys Arg Arg Arg Gly Lys

85

90

95

Ala Gly Ala Ala Ala Gly Gly Pro Ala Thr Leu Ala Val Cys Val Cys
 100 105 110
 Lys Ser Arg Tyr Pro Val Cys Gly Ser Asn Gly Ile Thr Tyr Pro Ser
 115 120 125
 Gly Cys Gln Leu Arg Ala Ala Ser Leu Arg Ala Glu Ser Arg Gly Glu
 130 135 140
 Lys Pro Ile Thr Gln Val Ser Lys Gly Thr Cys Glu Gln Gly Pro Ser
 145 150 155 160
 Ile Val Thr Pro Pro Lys Asp Ile Trp Asn Val Thr Gly Ala Lys Val
 165 170 175
 Phe Leu Ser Cys Glu Val Ile Gly Ile Pro Thr Pro Val Leu Ile Trp
 180 185 190
 Asn Lys Val Lys Arg Asp His Ser Gly Val Gln Arg Thr Glu Leu Leu
 195 200 205
 Pro Gly Asp Arg Glu Asn Leu Ala Ile Gln Thr Arg Gly Gly Pro Glu
 210 215 220
 Lys His Glu Val Thr Gly Trp Val Leu Val Ser Pro Leu Ser Lys Glu
 225 230 235 240
 Asp Ala Gly Glu Tyr Glu Cys His Ala Ser Asn Ser Gln Gly Gln Ala
 245 250 255
 Ser Ala Ala Ala Lys Ile Thr Val Val Asp Ala Leu His Glu Ile Pro
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<210> 795

<211> 4602

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (160).. (3957)

<400> 795

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acctgcctcg ccgggagata gtggataacc tcctcaaa atg gaa gat gga aag 174
                                     Met Glu Asp Gly Lys
                                     1           5
ccc gtt tgg gca ccc cac ccc aca gat gga ttt cag atg ggc aat att 222
Pro Val Trp Ala Pro His Pro Thr Asp Gly Phe Gln Met Gly Asn Ile
                                     10           15           20
gtg gat att ggc cct gac agc tta aca att gaa cct ttg aac caa aaa 270
Val Asp Ile Gly Pro Asp Ser Leu Thr Ile Glu Pro Leu Asn Gln Lys
                                     25           30           35
ggc aag aca ttt ggg gct ctc ata aac caa gta ttt cct gca gaa gag 318
Gly Lys Thr Phe Gly Ala Leu Ile Asn Gln Val Phe Pro Ala Glu Glu
                                     40           45           50
gac agc aaa aaa gat gtg gaa gat aac tgt tca ctg atg tac tta aat 366
Asp Ser Lys Lys Asp Val Glu Asp Asn Cys Ser Leu Met Tyr Leu Asn
                                     55           60           65
gaa gcc aca ctc ctc cac aat gtc aaa gtt cgg tac agt aaa gac aga 414
Glu Ala Thr Leu Leu His Asn Val Lys Val Arg Tyr Ser Lys Asp Arg
                                     70           75           80           85
atc tat aca tat gtg gcc aac att ctg att gca gtg aat cca tac ttt 462
Ile Tyr Thr Tyr Val Ala Asn Ile Leu Ile Ala Val Asn Pro Tyr Phe
                                     90           95           100

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gat ata cct aag ata tat tct tca gat aca ata aag tca tat caa gga 510
Asp Ile Pro Lys Ile Tyr Ser Ser Asp Thr Ile Lys Ser Tyr Gln Gly
105 110 115
aaa tct ctt ggg acg atg cca ccc cat gtc ttt ggc att gct gat aaa 558
Lys Ser Leu Gly Thr Met Pro Pro His Val Phe Gly Ile Ala Asp Lys
120 125 130
gct ttc cga gac atg aag gtg ctc aag atg agc cag tct atc atc gta 606
Ala Phe Arg Asp Met Lys Val Leu Lys Met Ser Gln Ser Ile Ile Val
135 140 145
tct gga gaa tca gga gct ggc aaa aca gaa aat aca aag ttt ggt tct 654
Ser Gly Glu Ser Gly Ala Gly Lys Thr Glu Asn Thr Lys Phe Gly Ser
150 155 160 165
aag ata cct gac aga atc tta tgg aca ggt caa gat att gat gat aga 702
Lys Ile Pro Asp Arg Ile Leu Trp Thr Gly Gln Asp Ile Asp Asp Arg
170 175 180
att gtt gaa gcg aat cca ctt tta gaa gca ttt gga aat gca aag act 750
Ile Val Glu Ala Asn Pro Leu Leu Glu Ala Phe Gly Asn Ala Lys Thr
185 190 195
gtt cgc aac aat aat agc agt cga ttt gga aaa ttt gta gaa att cat 798
Val Arg Asn Asn Asn Ser Ser Arg Phe Gly Lys Phe Val Glu Ile His
200 205 210
ttc aat gaa aag agt tcg gtt gtt gga gga ttt gtt tcc cat tac ctt 846
Phe Asn Glu Lys Ser Ser Val Val Gly Gly Phe Val Ser His Tyr Leu
215 220 225
cta gag aag tct agg atc tgt gtt caa ggc aaa gag gag cgg aat cac 894
Leu Glu Lys Ser Arg Ile Cys Val Gln Gly Lys Glu Glu Arg Asn His
230 235 240 245
cat att ttc tac agg ctc tgt gct ggg gct tca gaa gac atc agg gag 942
His Ile Phe Tyr Arg Leu Cys Ala Gly Ala Ser Glu Asp Ile Arg Glu

250	255	260	
aag ctt cac ttg agc tcc cca gat aat ttc cgg tat tta aac cgg ggc	990		
Lys Leu His Leu Ser Ser Pro Asp Asn Phe Arg Tyr Leu Asn Arg Gly			
265	270	275	
tgc act aga ttc ttc gct aac aaa gaa acg gac aaa cag att tta cag	1038		
Cys Thr Arg Phe Phe Ala Asn Lys Glu Thr Asp Lys Gln Ile Leu Gln			
280	285	290	
aac cga aaa agt cct gag tat gtt aag gca ggt tcc ttg gaa gga tcc	1086		
Asn Arg Lys Ser Pro Glu Tyr Val Lys Ala Gly Ser Leu Glu Gly Ser			
295	300	305	
tct att aga cga cca tgg aga ttt tat cag gat gtg cac agc cat gaa	1134		
Ser Ile Arg Arg Pro Trp Arg Phe Tyr Gln Asp Val His Ser His Glu			
310	315	320	325
aaa aat tgg ttt ggg atg atg aag aaa aac ttt gat ctg ttt cga gtt	1182		
Lys Asn Trp Phe Gly Met Met Lys Lys Asn Phe Asp Leu Phe Arg Val			
330	335	340	
gta gct ggt gtc ctg cac ctt gga aat att gat ttg gag gaa gcc gga	1230		
Val Ala Gly Val Leu His Leu Gly Asn Ile Asp Leu Glu Glu Ala Gly			
345	350	355	
agc act tca ggt ggc tgc aat ctg aag aac aaa tct gcc cca tcc ctg	1278		
Ser Thr Ser Gly Gly Cys Asn Leu Lys Asn Lys Ser Ala Pro Ser Leu			
360	365	370	
gaa tac tgt gct gag ctg ctg ggc ttg gac caa gat gat ctt cga gtc	1326		
Glu Tyr Cys Ala Glu Leu Leu Gly Leu Asp Gln Asp Asp Leu Arg Val			
375	380	385	
agt tta acc act cga gtc atg ctc acc aca gca ggg ggg acc aaa gga	1374		
Ser Leu Thr Thr Arg Val Met Leu Thr Thr Ala Gly Gly Thr Lys Gly			
390	395	400	405
acc gtt ata aag gtc ccc ctg aaa gtg gag cag gca aac aat gct cgc	1422		

Thr Val Ile Lys Val Pro Leu Lys Val Glu Gln Ala Asn Asn Ala Arg	
410 415 420	
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Asp Ala Leu Ala Lys Thr Val Tyr Ser His Leu Phe Asp His Val Val	
425 430 435	
aac agg gta aat cag tgc ttt cct ttt gaa aca tct tct tat ttt att	1518
Asn Arg Val Asn Gln Cys Phe Pro Phe Glu Thr Ser Ser Tyr Phe Ile	
440 445 450	
gga gtc ctg gat att gct ggt ttc gag tac ttt gag cac aac agc ttc	1566
Gly Val Leu Asp Ile Ala Gly Phe Glu Tyr Phe Glu His Asn Ser Phe	
455 460 465	
gag caa ttt tgt atc aac tat tgc aat gag aaa ctc caa cag ttt ttt	1614
Glu Gln Phe Cys Ile Asn Tyr Cys Asn Glu Lys Leu Gln Gln Phe Phe	
470 475 480 485	
aat gaa agg atc ctg aag gag gaa caa gaa ctg tat cag aaa gag ggc	1662
Asn Glu Arg Ile Leu Lys Glu Glu Gln Glu Leu Tyr Gln Lys Glu Gly	
490 495 500	
ctg ggt gtt aat gaa gtc cat tac gtg gac aat cag gac tgc ata gaa	1710
Leu Gly Val Asn Glu Val His Tyr Val Asp Asn Gln Asp Cys Ile Glu	
505 510 515	
tta atc gaa gtg aag tta gtg ggg atc ctg gat att ctg gat gaa gaa	1758
Leu Ile Glu Val Lys Leu Val Gly Ile Leu Asp Ile Leu Asp Glu Glu	
520 525 530	
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Asn Arg Leu Pro Gln Pro Ser Asp Gln His Phe Thr Ser Val Val His	
535 540 545	
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Gln Lys His Lys Asp His Phe Arg Leu Thr Ile Pro Arg Lys Ser Lys	
550 555 560 565	

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 Leu Ala Val His Arg Asn Leu Arg Asp Asp Glu Gly Phe Ile Ile Arg
 570 575 580
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 Gln Leu Cys Arg Gly Arg Val Leu Arg Arg Gln Pro Gln Tyr Gly Gly
 585 590 595
 gga aaa aat aat gat gca cta cat atg tct ctt gaa tcc ttg ata tgt 1998
 Gly Lys Asn Asn Asp Ala Leu His Met Ser Leu Glu Ser Leu Ile Cys
 600 605 610
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 Glu Ser Arg Asp Lys Phe Ile Arg Ala Leu Phe Glu Ser Ser Thr Asn
 615 620 625
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 Asn Ser Lys Asp Thr Lys Gln Lys Ala Gly Lys Leu Ser Phe Ile Ser
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 Arg Ser Thr Gly Ala Ser Phe Ile Arg Cys Ile Lys Pro Asn Leu Lys
 665 670 675
 atg gcg agt cac cac ttc gaa ggc gcc cag att ctg tct caa ctt cag 2238
 Met Ala Ser His His Phe Glu Gly Ala Gln Ile Leu Ser Gln Leu Gln
 680 685 690
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 Cys Ser Gly Met Val Ser Val Leu Asp Leu Met Gln Gly Gly Phe Pro
 695 700 705
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 Ser Arg Ala Ser Phe His Glu Leu Tyr Asn Met Tyr Lys Lys Tyr Met

710	715	720	725	
cca gaa aaa ctt cca aga ttg gat ccg agg tta ttt tgt aag cct ctt	2382			
Pro Glu Lys Leu Pro Arg Leu Asp Pro Arg Leu Phe Cys Lys Pro Leu				
	730	735	740	
ttt aaa gct ttg gga tta aat gaa gtt gac tac aag ttt ggg ctg aca	2430			
Phe Lys Ala Leu Gly Leu Asn Glu Val Asp Tyr Lys Phe Gly Leu Thr				
	745	750	755	
caa gta ttt ttc aga cct ggc aag ttt gca gaa ttt gat cag att atg	2478			
Gln Val Phe Phe Arg Pro Gly Lys Phe Ala Glu Phe Asp Gln Ile Met				
	760	765	770	
aag tct gac cct gat cac tta gca gag ttg gtg aaa aga gtc aac ctg	2526			
Lys Ser Asp Pro Asp His Leu Ala Glu Leu Val Lys Arg Val Asn Leu				
	775	780	785	
tgg cta gtc tgt agt cgc tgg aag aaa gtt cag tgg tgt tca ctg tca	2574			
Trp Leu Val Cys Ser Arg Trp Lys Lys Val Gln Trp Cys Ser Leu Ser				
	790	795	800	805
gtc atc aag ctg aaa aac aaa ata aaa tat cga gct gaa gca tgc att	2622			
Val Ile Lys Leu Lys Asn Lys Ile Lys Tyr Arg Ala Glu Ala Cys Ile				
	810	815	820	
aaa atg cag aaa ccc atc cga atg tgg ctt tgc aaa agg agg cac aac	2670			
Lys Met Gln Lys Pro Ile Arg Met Trp Leu Cys Lys Arg Arg His Asn				
	825	830	835	
cca cgc att gac ggc ctg gtt aag gtg ggc aca ctc aag aaa cga ctc	2718			
Pro Arg Ile Asp Gly Leu Val Lys Val Gly Thr Leu Lys Lys Arg Leu				
	840	845	850	
gat aag ttc aat gaa gtc gta agt gcg ctg aaa gat ggg aag ccg gag	2766			
Asp Lys Phe Asn Glu Val Val Ser Ala Leu Lys Asp Gly Lys Pro Glu				
	855	860	865	
gtg aac aga cag atc aaa aat ctt gaa att tct att gat gct cta atg	2814			

Val Asn Arg Gln Ile Lys Asn Leu Glu Ile Ser Ile Asp Ala Leu Met
 870 875 880 885
 gcc aaa ttt acg tcc acc atg atg acg agg gag cag ata cag aaa gag 2862
 Ala Lys Phe Thr Ser Thr Met Met Thr Arg Glu Gln Ile Gln Lys Glu
 890 895 900
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 Tyr Asp Ala Leu Val Lys Ser Ser Glu Asp Leu Leu Ser Ala Leu Gln
 905 910 915
 aaa aag aaa cag caa gag gag gag gcc gag agg ctg agg cgc atc cag 2958
 Lys Lys Lys Gln Gln Glu Glu Glu Ala Glu Arg Leu Arg Arg Ile Gln
 920 925 930
 gag gag atg gag aaa gaa agg aag agg cgt gaa gaa gat gag gaa cgt 3006
 Glu Glu Met Glu Lys Glu Arg Lys Arg Arg Glu Glu Asp Glu Glu Arg
 935 940 945
 cgg cgg aag gag gaa gag gag agg cgg atg aaa ctt gag atg gaa ccg 3054
 Arg Arg Lys Glu Glu Glu Glu Arg Arg Met Lys Leu Glu Met Glu Pro
 950 955 960 965
 aag aga aaa caa gaa gag gaa gaa agg aag aag cgg gaa gat gat gaa 3102
 Lys Arg Lys Gln Glu Glu Glu Glu Arg Lys Lys Arg Glu Asp Asp Glu
 970 975 980
 aag cga atc cag tct gag gtg gag gca cag ctg gca aga cag cgg gag 3150
 Lys Arg Ile Gln Ser Glu Val Glu Ala Gln Leu Ala Arg Gln Arg Glu
 985 990 995
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 Glu Glu Ser Gln Gln Gln Ala Val Leu Ala Gln Glu Cys Arg Asp Arg
 1000 1005 1010
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 Glu Leu Ala Leu Arg Ile Ala Gln Asn Glu Ser Glu Leu Ile Ser Asp
 1015 1020 1025

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 Glu Ala Gln Gly Asp Met Ala Leu Arg Arg Gly Pro Ala Val Gln Ala
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 acc aag gct gct tct ggt acc aag aaa cat gat ctc agt aaa tgg aaa 3342
 Thr Lys Ala Ala Ser Gly Thr Lys Lys His Asp Leu Ser Lys Trp Lys
 1050 1055 1060
 tac gca gaa cta cgc gat aca atc aat act tcc tgt gac att gag ctc 3390
 Tyr Ala Glu Leu Arg Asp Thr Ile Asn Thr Ser Cys Asp Ile Glu Leu
 1065 1070 1075
 ctg gca gct tgc aga gaa gag ttt cac agg aga ctg aaa gtg tat cat 3438
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 gct tgg aaa tcc aag aac aag aaa aga aac act gag acc gag cag cgc 3486
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 Ala Pro Lys Ser Val Thr Asp Tyr Asp Phe Ala Pro Phe Leu Asn Asn
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 tca cct cag cag aat ccc gca gct cag ctc cct gcc agg cag cag gag 3582
 Ser Pro Gln Gln Asn Pro Ala Ala Gln Leu Pro Ala Arg Gln Gln Glu
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 Ile Asp Met Lys Arg Gln Gln Arg Phe Phe Arg Ile Pro Phe Ile Arg
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 Pro Ala Asp Gln Tyr Lys Asp Pro Gln Asn Lys Lys Lys Gly Trp Trp
 1160 1165 1170
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 Tyr Ala His Phe Asp Gly Pro Trp Ile Ala Arg Gln Met Glu Leu His

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Pro Asp Lys Pro Pro Ile Leu Leu Val Ala Gly Lys Asp Asp Met Glu			
1190	1195	1200	1205
atg tgt gag ctg aat ctc gag gag acg ggt ctg act cgc aag cgt ggt	3822		
Met Cys Glu Leu Asn Leu Glu Glu Thr Gly Leu Thr Arg Lys Arg Gly			
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gct gag atc ttg ccc aga cag ttt gaa gag atc tgg gag cgt tgt gga	3870		
Ala Glu Ile Leu Pro Arg Gln Phe Glu Glu Ile Trp Glu Arg Cys Gly			
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Gly Ile Gln Tyr Leu Gln Ser Ala Ile Glu Ser Arg Gln Ala Arg Pro			
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acc tat gct acg gcc atg ctg cag aac ctg ctc aag tag accggagggt	3967		
Thr Tyr Ala Thr Ala Met Leu Gln Asn Leu Leu Lys			
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<213> Mus musculus

<400> 796

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Phe Pro Ala Glu Glu Asp Ser Lys Lys Asp Val Glu Asp Asn Cys Ser
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Tyr Ser Lys Asp Arg Ile Tyr Thr Tyr Val Ala Asn Ile Leu Ile Ala
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Val Asn Pro Tyr Phe Asp Ile Pro Lys Ile Tyr Ser Ser Asp Thr Ile
100 105 110
Lys Ser Tyr Gln Gly Lys Ser Leu Gly Thr Met Pro Pro His Val Phe
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Gly Ile Ala Asp Lys Ala Phe Arg Asp Met Lys Val Leu Lys Met Ser
130 135 140
Gln Ser Ile Ile Val Ser Gly Glu Ser Gly Ala Gly Lys Thr Glu Asn
145 150 155 160
Thr Lys Phe Gly Ser Lys Ile Pro Asp Arg Ile Leu Trp Thr Gly Gln
165 170 175
Asp Ile Asp Asp Arg Ile Val Glu Ala Asn Pro Leu Leu Glu Ala Phe
180 185 190

Gly Asn Ala Lys Thr Val Arg Asn Asn Asn Ser Ser Arg Phe Gly Lys
 195 200 205
 Phe Val Glu Ile His Phe Asn Glu Lys Ser Ser Val Val Gly Gly Phe
 210 215 220
 Val Ser His Tyr Leu Leu Glu Lys Ser Arg Ile Cys Val Gln Gly Lys
 225 230 235 240
 Glu Glu Arg Asn His His Ile Phe Tyr Arg Leu Cys Ala Gly Ala Ser
 245 250 255
 Glu Asp Ile Arg Glu Lys Leu His Leu Ser Ser Pro Asp Asn Phe Arg
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 Tyr Leu Asn Arg Gly Cys Thr Arg Phe Phe Ala Asn Lys Glu Thr Asp
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 Lys Gln Ile Leu Gln Asn Arg Lys Ser Pro Glu Tyr Val Lys Ala Gly
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 Ser Leu Glu Gly Ser Ser Ile Arg Arg Pro Trp Arg Phe Tyr Gln Asp
 305 310 315 320
 Val His Ser His Glu Lys Asn Trp Phe Gly Met Met Lys Lys Asn Phe
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 Leu Glu Glu Ala Gly Ser Thr Ser Gly Gly Cys Asn Leu Lys Asn Lys
 355 360 365
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 Asp Asp Leu Arg Val Ser Leu Thr Thr Arg Val Met Leu Thr Thr Ala
 385 390 395 400
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 405 410 415
 Ala Asn Asn Ala Arg Asp Ala Leu Ala Lys Thr Val Tyr Ser His Leu

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Ser Ser Tyr Phe Ile Gly Val Leu Asp Ile Ala Gly Phe Glu Tyr Phe		
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465	470	475
Leu Gln Gln Phe Phe Asn Glu Arg Ile Leu Lys Glu Glu Gln Glu Leu		
485	490	495
Tyr Gln Lys Glu Gly Leu Gly Val Asn Glu Val His Tyr Val Asp Asn		
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Gln Asp Cys Ile Glu Leu Ile Glu Val Lys Leu Val Gly Ile Leu Asp		
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Ile Leu Asp Glu Glu Asn Arg Leu Pro Gln Pro Ser Asp Gln His Phe		
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Thr Ser Val Val His Gln Lys His Lys Asp His Phe Arg Leu Thr Ile		
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Pro Arg Lys Ser Lys Leu Ala Val His Arg Asn Leu Arg Asp Asp Glu		
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Gly Phe Ile Ile Arg Gln Leu Cys Arg Gly Arg Val Leu Arg Arg Gln		
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Pro Gln Tyr Gly Gly Gly Lys Asn Asn Asp Ala Leu His Met Ser Leu		
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Glu Ser Leu Ile Cys Glu Ser Arg Asp Lys Phe Ile Arg Ala Leu Phe		
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Leu Ser Phe Ile Ser Val Gly Asn Lys Phe Lys Thr Gln Leu Asn Leu		
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Leu Leu Asp Lys Leu Arg Ser Thr Gly Ala Ser Phe Ile Arg Cys Ile
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 Lys Pro Asn Leu Lys Met Ala Ser His His Phe Glu Gly Ala Gln Ile
 675 680 685
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 690 695 700
 Gln Gly Gly Phe Pro Ser Arg Ala Ser Phe His Glu Leu Tyr Asn Met
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 Phe Cys Lys Pro Leu Phe Lys Ala Leu Gly Leu Asn Glu Val Asp Tyr
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 835 840 845
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 850 855 860
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Leu Glu Met Glu Pro Lys Arg Lys Gln Glu Glu Glu Glu Arg Lys Lys			
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Arg Glu Asp Asp Glu Lys Arg Ile Gln Ser Glu Val Glu Ala Gln Leu			
	980	985	990
Ala Arg Gln Arg Glu Glu Glu Ser Gln Gln Gln Ala Val Leu Ala Gln			
	995	1000	1005
Glu Cys Arg Asp Arg Glu Leu Ala Leu Arg Ile Ala Gln Asn Glu Ser			
1010	1015	1020	
Glu Leu Ile Ser Asp Glu Ala Gln Gly Asp Met Ala Leu Arg Arg Gly			
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Pro Ala Val Gln Ala Thr Lys Ala Ala Ser Gly Thr Lys Lys His Asp			
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Leu Ser Lys Trp Lys Tyr Ala Glu Leu Arg Asp Thr Ile Asn Thr Ser			
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Cys Asp Ile Glu Leu Leu Ala Ala Cys Arg Glu Glu Phe His Arg Arg			
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Leu Lys Val Tyr His Ala Trp Lys Ser Lys Asn Lys Lys Arg Asn Thr			
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Glu Thr Glu Gln Arg Ala Pro Lys Ser Val Thr Asp Tyr Asp Phe Ala			
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<400> 797

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gac atg gtg gtt gct ctt tcc ttc cca gaa gca gat cca gcc cta tca 228
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Ser Pro Asp Ala Pro Glu Leu His Gln Asp Glu Ala Gln Val Val Glu
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Glu Leu Thr Val Asn Gly Lys His Ser Leu Ser Trp Glu Ser Pro Gln
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Ser Gly Asp Val Met Lys Pro Ser His Ile Leu Thr Ser Ala Phe His
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Ser Glu Asp Ser Ser Pro Ile His Asp Ile Phe Gly Gly Trp Trp Arg
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Ala Tyr Tyr Cys Gly Lys Cys Arg Gln Lys Met Pro Ala Ser Lys Thr
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ctg cat gtt cat att gct cca aag gta ctc atg gta gtg tta aat cgc 948
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Phe Ser Ala Phe Thr Gly Asn Lys Leu Asp Arg Lys Val Ser Tyr Pro
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Glu Phe Leu Asp Leu Lys Pro Tyr Leu Ser Glu Pro Thr Gly Gly Pro

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Tyr Lys Met Asp Asp Thr Lys Val Thr Arg Cys Asp Val Thr Ser Val			
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ctg aat gag aat gcc tat gtg ctc ttc tat gtg cag cag gcc aac ctc	1236		
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Lys Gln Val Ser Ile Asp Met Pro Glu Gly Arg Ile Asn Glu Val Leu			
355	360	365	
gac cct gaa tac cag ctg aag aaa tca cgg aga aaa aag cat aag aag	1332		
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<213> Mus musculus

<400> 798

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Leu	Thr	Val	Asn	Gly	Lys	His	Ser	Leu	Ser	Trp	Glu	Ser	Pro	Gln	Gly
			35					40					45		
Pro	Gly	Cys	Gly	Leu	Gln	Asn	Thr	Gly	Asn	Ser	Cys	Tyr	Leu	Asn	Ala
		50				55					60				
Ala	Leu	Gln	Cys	Leu	Thr	His	Thr	Pro	Pro	Leu	Ala	Asp	Tyr	Met	Leu
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Ser	Gln	Glu	His	Ser	Gln	Thr	Cys	Cys	Ser	Pro	Glu	Gly	Cys	Lys	Leu
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Cys	Ala	Met	Glu	Ala	Leu	Val	Thr	Gln	Ser	Leu	Leu	His	Ser	His	Ser
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His	Gln	Gln	Glu	Asp	Ala	His	Glu	Phe	Leu	Met	Phe	Thr	Leu	Glu	Thr
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 Glu Asp Ser Ser Pro Ile His Asp Ile Phe Gly Gly Trp Trp Arg Ser
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 Gln Ile Lys Cys Leu Leu Cys Gln Gly Thr Ser Asp Thr Tyr Asp Arg
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 Phe Leu Asp Ile Pro Leu Asp Ile Ser Ser Ala Gln Ser Val Lys Gln
 195 200 205
 Ala Leu Trp Asp Thr Glu Lys Ser Glu Glu Leu Cys Gly Asp Asn Ala
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 His Val His Ile Ala Pro Lys Val Leu Met Val Val Leu Asn Arg Phe
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 Ser Ala Phe Thr Gly Asn Lys Leu Asp Arg Lys Val Ser Tyr Pro Glu
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 Phe Leu Asp Leu Lys Pro Tyr Leu Ser Glu Pro Thr Gly Gly Pro Leu
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 Pro Tyr Ala Leu Tyr Ala Val Leu Val His Asp Gly Ala Thr Ser His
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 Ser Gly His Tyr Phe Cys Cys Val Lys Ala Gly His Gly Lys Trp Tyr
 305 310 315 320
 Lys Met Asp Asp Thr Lys Val Thr Arg Cys Asp Val Thr Ser Val Leu
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 Asn Glu Asn Ala Tyr Val Leu Phe Tyr Val Gln Gln Ala Asn Leu Lys
 340 345 350
 Gln Val Ser Ile Asp Met Pro Glu Gly Arg Ile Asn Glu Val Leu Asp
 355 360 365
 Pro Glu Tyr Gln Leu Lys Lys Ser Arg Arg Lys Lys His Lys Lys Lys

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Ser Pro Phe Thr Glu Asp Leu Gly Glu Pro Cys Glu Asn Arg Asp Lys			
385	390	395	400
Arg Ala Ile Lys Glu Thr Ser Leu Gly Lys Gly Lys Val Leu Gln Glu			
	405	410	415
Val Asn His Lys Lys Ala Gly Gln Lys His Gly Asn Thr Lys Leu Met			
	420	425	430
Pro Gln Lys Gln Asn His Gln Lys Ala Gly Gln Asn Leu Arg Asn Thr			
	435	440	445
Glu Val Glu Leu Asp Leu Pro Ala Asp Ala Ile Val Ile His Gln Pro			
	450	455	460
Arg Ser Thr Ala Asn Trp Gly Arg Asp Ser Pro Asp Lys Glu Asn Gln			
465	470	475	480
Pro Leu His Asn Ala Asp Arg Leu Leu Thr Ser Gln Gly Pro Val Asn			
	485	490	495
Thr Trp Gln Leu Cys Arg Gln Glu Gly Arg Arg Arg Ser Lys Lys Gly			
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 ggacgggctg tccttgttgg aaggaacc atg aat tgg cat ttt cct ttc ttc 172

Met Asn Trp His Phe Pro Phe Phe

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atc ttg acc aca gtg act tta tac tct gtg cac tcc cag ttc aac tct 220
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10

15

20

ctg tca ctg gag gaa cta ggc tcc aac aca ggg atc cag gtc ttc aat 268
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25

30

35

40

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55

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 Gly Ile Ala Ser Ile Leu Gly Met Leu Gln Leu Gly Ala Asp Gly Lys

60

65

70

aca aag aag cag ctc tcc acg gtg atg cga tat aat gta aac gga gtt 412
 Thr Lys Lys Gln Leu Ser Thr Val Met Arg Tyr Asn Val Asn Gly Val

75

80

85

ggt aaa gtg ctg aag aag atc aac aag gct att gtc tcc aag aaa aat 460
 Gly Lys Val Leu Lys Lys Ile Asn Lys Ala Ile Val Ser Lys Lys Asn

90

95

100

aaa gac att gtg acc gtg gcc aat gct gtg ttt ctc agg aat ggc ttt 508
 Lys Asp Ile Val Thr Val Ala Asn Ala Val Phe Leu Arg Asn Gly Phe

105

110

115

120

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 Lys Met Glu Val Pro Phe Ala Val Arg Asn Lys Asp Val Phe Gln Cys

125	130	135	
gaa gtg cag aat gtg aac ttc cag gac cca gcc tct gcc tct gag tcc			604
Glu Val Gln Asn Val Asn Phe Gln Asp Pro Ala Ser Ala Ser Glu Ser			
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atc aat ttt tgg gtc aaa aat gag acc agg ggc atg att gat aat ctg			652
Ile Asn Phe Trp Val Lys Asn Glu Thr Arg Gly Met Ile Asp Asn Leu			
155	160	165	
ctt tcc cca aat ctg atc gat ggt gcc ctt acc agg ctg gtc ctc gtt			700
Leu Ser Pro Asn Leu Ile Asp Gly Ala Leu Thr Arg Leu Val Leu Val			
170	175	180	
aat gca gtg tat ttc aag ggt ttg tgg aag tct cgg ttt caa cca gag			748
Asn Ala Val Tyr Phe Lys Gly Leu Trp Lys Ser Arg Phe Gln Pro Glu			
185	190	195	200
agc aca aag aaa cgg aca ttc gtg gca ggt gat ggg aaa tcc tac caa			796
Ser Thr Lys Lys Arg Thr Phe Val Ala Gly Asp Gly Lys Ser Tyr Gln			
205	210	215	
gta ccc atg ttg gct cag ctc tct gtg ttc cgc tca ggg tct acc agg			844
Val Pro Met Leu Ala Gln Leu Ser Val Phe Arg Ser Gly Ser Thr Arg			
220	225	230	
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Thr Pro Asn Gly Leu Trp Tyr Asn Phe Ile Glu Leu Pro Tyr His Gly			
235	240	245	
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Glu Ser Ile Ser Met Leu Ile Ala Leu Pro Thr Glu Ser Ser Thr Pro			
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ctg tct gcc atc atc cct cac atc act acc aag acc att gat agc tgg			988
Leu Ser Ala Ile Ile Pro His Ile Thr Thr Lys Thr Ile Asp Ser Trp			
265	270	275	280
atg aac acc atg gta ccc aag agg atg cag ctg gtc cta ccc aag ttc			1036

Met Asn Thr Met Val Pro Lys Arg Met Gln Leu Val Leu Pro Lys Phe
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Ile Thr Glu Met Phe Glu Pro Ser Lys Ala Asn Phe Thr Lys Ile Thr
315 320 325
agg tca gag agc ctt cat gtc tct cac atc ttg caa aaa gca aaa att 1180
Arg Ser Glu Ser Leu His Val Ser His Ile Leu Gln Lys Ala Lys Ile
330 335 340
gaa gtc agt gaa gat gga acc aaa gct tca gca gca aca act gca atc 1228
Glu Val Ser Glu Asp Gly Thr Lys Ala Ser Ala Ala Thr Thr Ala Ile
345 350 355 360
cta att gca agg tca tca cct ccc tgg ttt ata gta gac agg cct ttc 1276
Leu Ile Ala Arg Ser Ser Pro Pro Trp Phe Ile Val Asp Arg Pro Phe
365 370 375
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Leu Phe Ser Ile Arg His Asn Pro Thr Gly Ala Ile Leu Phe Leu Gly
380 385 390
cag gtg aac aag ccc tga aggacagaca aaggaaagcc acgcaaagcc 1372
Gln Val Asn Lys Pro
395
aagacgactt ggctctgaag agagactccc tccccacatc tttcatagtt ctgttaaata 1432
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<210> 800

<211> 397

<212> PRT

<213> Mus musculus

<400> 800

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				20				25					30		
Asn	Thr	Gly	Ile	Gln	Val	Phe	Asn	Gln	Ile	Ile	Lys	Ser	Arg	Pro	His
		35					40				45				
Glu	Asn	Val	Val	Val	Ser	Pro	His	Gly	Ile	Ala	Ser	Ile	Leu	Gly	Met
	50					55				60					
Leu	Gln	Leu	Gly	Ala	Asp	Gly	Lys	Thr	Lys	Lys	Gln	Leu	Ser	Thr	Val
65				70				75				80			
Met	Arg	Tyr	Asn	Val	Asn	Gly	Val	Gly	Lys	Val	Leu	Lys	Lys	Ile	Asn
			85				90				95				
Lys	Ala	Ile	Val	Ser	Lys	Lys	Asn	Lys	Asp	Ile	Val	Thr	Val	Ala	Asn
		100					105				110				
Ala	Val	Phe	Leu	Arg	Asn	Gly	Phe	Lys	Met	Glu	Val	Pro	Phe	Ala	Val
		115				120				125					
Arg	Asn	Lys	Asp	Val	Phe	Gln	Cys	Glu	Val	Gln	Asn	Val	Asn	Phe	Gln

130	135	140
Asp Pro Ala Ser Ala Ser Glu Ser Ile Asn Phe Trp Val Lys Asn Glu		
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Thr Arg Gly Met Ile Asp Asn Leu Leu Ser Pro Asn Leu Ile Asp Gly		160
	165	170
Ala Leu Thr Arg Leu Val Leu Val Asn Ala Val Tyr Phe Lys Gly Leu		175
	180	185
Trp Lys Ser Arg Phe Gln Pro Glu Ser Thr Lys Lys Arg Thr Phe Val		190
	195	200
Ala Gly Asp Gly Lys Ser Tyr Gln Val Pro Met Leu Ala Gln Leu Ser		205
	210	215
Val Phe Arg Ser Gly Ser Thr Arg Thr Pro Asn Gly Leu Trp Tyr Asn		220
225	230	235
Phe Ile Glu Leu Pro Tyr His Gly Glu Ser Ile Ser Met Leu Ile Ala		240
	245	250
Leu Pro Thr Glu Ser Ser Thr Pro Leu Ser Ala Ile Ile Pro His Ile		255
	260	265
Thr Thr Lys Thr Ile Asp Ser Trp Met Asn Thr Met Val Pro Lys Arg		270
	275	280
Met Gln Leu Val Leu Pro Lys Phe Thr Ala Val Ala Gln Thr Asp Leu		285
	290	295
Lys Glu Pro Leu Lys Ala Leu Gly Ile Thr Glu Met Phe Glu Pro Ser		300
305	310	315
Lys Ala Asn Phe Thr Lys Ile Thr Arg Ser Glu Ser Leu His Val Ser		320
	325	330
His Ile Leu Gln Lys Ala Lys Ile Glu Val Ser Glu Asp Gly Thr Lys		335
	340	345
Ala Ser Ala Ala Thr Thr Ala Ile Leu Ile Ala Arg Ser Ser Pro Pro		350
	355	360
		365

Trp Phe Ile Val Asp Arg Pro Phe Leu Phe Ser Ile Arg His Asn Pro

370

375

380

Thr Gly Ala Ile Leu Phe Leu Gly Gln Val Asn Lys Pro

385

390

395

<210> 801

<211> 630

<212> DNA

<213> Mus musculus

<400> 801

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 cttgtccggt cttcatgtac aggtccctca tggctgtgaa ttgctccgtt cctgcagtgt 180
 ccaagatgtg aagcatacac tgctgtgcat ctacttcaac ttgctttcta taagagagca 240
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 cttggaagat gaaagagttg taggaaagga acaaggtcag aacctagcaa gacagtggaa 360
 caactgtgca ttcttagaat cctctgcaaa gtccaaaata aatgttagtg agatctttaa 420
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 atcgtgtcag ctgctttaat gtactgaatg cattgtagct ctgagccagg tttgaagacc 540
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<210> 802

<211> 281

<212> DNA

<213> Mus musculus

<400> 802

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 tctgtctgctt tgtactgagg aagcgatgat gcttcaattg ttgagctgic tttactttga 180
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<210> 803

<211> 1472

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (162).. (1094)

<400> 803

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 tcggcgaagc ccaggagaca gcggaggaat ttaatcgaga a atg ttt tgg aga aga 176

Met Phe Trp Arg Arg

1

5

ctc aat gag gca gca gtg aaa gtg aac ggg gaa gcc act gtt ctg aca 224

Leu Asn Glu Ala Ala Val Lys Val Asn Gly Glu Ala Thr Val Leu Thr

10

15

20

acg cac ttc tct aaa ctt cca tgg cca tct cca cag gaa acc cag agg 272

Thr His Phe Ser Lys Leu Pro Trp Pro Ser Pro Gln Glu Thr Gln Arg

25

30

35

atc tgt gag caa gtc cgt att gcc atc gag gaa ata att ata gtg tat 320

Ile Cys Glu Gln Val Arg Ile Ala Ile Glu Glu Ile Ile Ile Val Tyr

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tat tca ctt cct aag gac cag gga atc acc ctg aga aag ctg gta cgg	368		
Tyr Ser Leu Pro Lys Asp Gln Gly Ile Thr Leu Arg Lys Leu Val Arg			
55	60	65	
aat gct gcc ctg gac atc gtg gac ggc atg gct cag ctc ctg gaa gtg	416		
Asn Ala Ala Leu Asp Ile Val Asp Gly Met Ala Gln Leu Leu Glu Val			
70	75	80	85
ctt ctt act gct cca tct cag agc act gag aat ggt gac ctg att tcc	464		
Leu Leu Thr Ala Pro Ser Gln Ser Thr Glu Asn Gly Asp Leu Ile Ser			
90	95	100	
tgc aat agt gtc tca gtc gca tgt caa cag gtg cct gag atc cca aaa	512		
Cys Asn Ser Val Ser Val Ala Cys Gln Gln Val Pro Glu Ile Pro Lys			
105	110	115	
gat aac aaa gcc gca gcc ctt ttg atg ctg acc aag agt gtg gat ttt	560		
Asp Asn Lys Ala Ala Ala Leu Leu Met Leu Thr Lys Ser Val Asp Phe			
120	125	130	
gtg aaa gat gca cat gaa gaa atg gag cag gct gta gaa gaa tgt gac	608		
Val Lys Asp Ala His Glu Glu Met Glu Gln Ala Val Glu Glu Cys Asp			
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ccg tac agc ggc ctc ttg aat gat tct gaa gac aac tcc gac agc cac	656		
Pro Tyr Ser Gly Leu Leu Asn Asp Ser Glu Asp Asn Ser Asp Ser His			
150	155	160	165
agt gat gag gat ggt gtg tta ggg ctt ccc agc aat cgg gac tca tac	704		
Ser Asp Glu Asp Gly Val Leu Gly Leu Pro Ser Asn Arg Asp Ser Tyr			
170	175	180	
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Trp Ser Glu Glu Asp Gln Glu Leu Ile Ile Pro Cys Leu Ala Leu Val			
185	190	195	
aga gca tcc cga gct tca ctc aag aaa atc cgg atc ttg gtg gct gag	800		

Arg Ala Ser Arg Ala Ser Leu Lys Lys Ile Arg Ile Leu Val Ala Glu
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 aat gga aag aag gat gag gtg gcc cag ctg gat gac att gtg gga cat 848
 Asn Gly Lys Lys Asp Glu Val Ala Gln Leu Asp Asp Ile Val Gly His
 215 220 225
 ttc ttg atg aga tca gcc cca gtg tgg att gac tlg gtt ctg agc ata 896
 Phe Leu Met Arg Ser Ala Pro Val Trp Ile Asp Leu Val Leu Ser Ile
 230 235 240 245
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 Tyr Pro Pro Val Cys His Leu Thr Val Arg Ile Ser Ser Ala Lys Leu
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 Val Ser Val Leu Ile Lys Ala Leu Glu Ile Thr Lys Ala Ser His Val
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 280 285 290
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 Asp His Cys Met Asn Arg Ile Lys Ala Leu Thr Gln Arg Ala Ala Glu
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 Leu
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<210> 804

<211> 310

<212> PRT

<213> Mus musculus

<400> 804

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Gln Glu Thr Gln Arg Ile Cys Glu Gln Val Arg Ile Ala Ile Glu Glu
      35             40             45
Ile Ile Ile Val Tyr Tyr Ser Leu Pro Lys Asp Gln Gly Ile Thr Leu
      50             55             60
Arg Lys Leu Val Arg Asn Ala Ala Leu Asp Ile Val Asp Gly Met Ala
      65             70             75             80
Gln Leu Leu Glu Val Leu Leu Thr Ala Pro Ser Gln Ser Thr Glu Asn
      85             90             95
Gly Asp Leu Ile Ser Cys Asn Ser Val Ser Val Ala Cys Gln Gln Val
      100            105            110
Pro Glu Ile Pro Lys Asp Asn Lys Ala Ala Ala Leu Leu Met Leu Thr
      115            120            125
Lys Ser Val Asp Phe Val Lys Asp Ala His Glu Glu Met Glu Gln Ala
      130            135            140
Val Glu Glu Cys Asp Pro Tyr Ser Gly Leu Leu Asn Asp Ser Glu Asp
      145            150            155            160
Asn Ser Asp Ser His Ser Asp Glu Asp Gly Val Leu Gly Leu Pro Ser
      165            170            175

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Asn Arg Asp Ser Tyr Trp Ser Glu Glu Asp Gln Glu Leu Ile Ile Pro
 180 185 190
 Cys Leu Ala Leu Val Arg Ala Ser Arg Ala Ser Leu Lys Lys Ile Arg
 195 200 205
 Ile Leu Val Ala Glu Asn Gly Lys Lys Asp Glu Val Ala Gln Leu Asp
 210 215 220
 Asp Ile Val Gly His Phe Leu Met Arg Ser Ala Pro Val Trp Ile Asp
 225 230 235 240
 Leu Val Leu Ser Ile Tyr Pro Pro Val Cys His Leu Thr Val Arg Ile
 245 250 255
 Ser Ser Ala Lys Leu Val Ser Val Leu Ile Lys Ala Leu Glu Ile Thr
 260 265 270
 Lys Ala Ser His Val Ser Pro His Pro Gly Asp Ser Trp Ile Pro Leu
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<210> 805

<211> 1880

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (81).. (1604)

<400> 805

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Met Gln Gly Ala Thr Thr Leu Asp Ala Ala Ser

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Pro Gly Pro Leu Ala Leu Leu Gly Leu Leu Phe Ala Ala Thr Leu Leu				
	15	20	25	
ctc tcg gcc ctg ttc ctc ctc acc cgg cgc acc agg cgc cct cgt gaa	209			
Leu Ser Ala Leu Phe Leu Leu Thr Arg Arg Thr Arg Arg Pro Arg Glu				
	30	35	40	
cca ccc ttg ata aaa ggt tgg ctt cct tat ctt ggc atg gcc ctg aaa	257			
Pro Pro Leu Ile Lys Gly Trp Leu Pro Tyr Leu Gly Met Ala Leu Lys				
	45	50	55	
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Phe Phe Lys Asp Pro Leu Thr Phe Leu Lys Thr Leu Gln Arg Gln His				
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ggc gac act ttc act gtc ttc ctt gtc ggg aag tat ata aca ttt gtt	353			
Gly Asp Thr Phe Thr Val Phe Leu Val Gly Lys Tyr Ile Thr Phe Val				
	80	85	90	
ctg aac cct ttc cag tac cag tat gta acg aaa aac cca aaa caa tta	401			
Leu Asn Pro Phe Gln Tyr Gln Tyr Val Thr Lys Asn Pro Lys Gln Leu				
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Ser Phe Gln Lys Phe Ser Ser Arg Leu Ser Ala Lys Ala Phe Ser Val				
	110	115	120	
aag aag ctg ctt act gat gac gac ctt aat gaa gac gtt cac aga gcc	497			
Lys Lys Leu Leu Thr Asp Asp Asp Leu Asn Glu Asp Val His Arg Ala				
	125	130	135	
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Tyr Leu Leu Leu Gln Gly Lys Pro Leu Asp Ala Leu Leu Glu Thr Met
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 Ile Gln Glu Val Lys Glu Leu Phe Glu Ser Gln Leu Leu Lys Ile Thr
 160 165 170
 gat tgg aac aca gaa aga ata ttt gca ttc tgt ggc tca ctg gta ttt 641
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 Glu Ile Thr Phe Ala Thr Leu Tyr Gly Lys Ile Leu Ala Gly Asn Lys
 190 195 200
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 Glu Glu Ser Met Gln Lys Lys Ile Ile Lys Cys Leu Thr Ser Glu Lys
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 gta gct cag atg caa gga cag tca aaa att gtt cag gaa agc caa gat 881
 Val Ala Gln Met Gln Gly Gln Ser Lys Ile Val Gln Glu Ser Gln Asp
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 Leu Leu Lys Arg Tyr Tyr Arg His Asp Asp Ser Glu Ile Gly Ala His
 270 275 280
 cat ctt ggc ttt ctc tgg gcc tct cta gca aac acc att cca gct atg 977
 His Leu Gly Phe Leu Trp Ala Ser Leu Ala Asn Thr Ile Pro Ala Met
 285 290 295

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          320          325          330
ggg cct gga att tca gtc cac ttc acc aga gaa caa tlg gac agc ttg 1121
Gly Pro Gly Ile Ser Val His Phe Thr Arg Glu Gln Leu Asp Ser Leu
          335          340          345
gtc tgc ctg gaa agc act att ctt gag gtt ctg agg ctg tgc tca tac 1169
Val Cys Leu Glu Ser Thr Ile Leu Glu Val Leu Arg Leu Cys Ser Tyr
          350          355          360
tcc agc atc atc cga gaa gtg cag gag gat atg aat ctc agc tta gag 1217
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          365          370          375
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380          385          390          395
cca ctc ata cac aat gac ccg gaa atc ttc gat gct cca aag gaa ttt 1313
Pro Leu Ile His Asn Asp Pro Glu Ile Phe Asp Ala Pro Lys Glu Phe
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          415          420          425
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Lys Gly Gly Lys Arg Leu Lys Thr Tyr Val Met Pro Phe Gly Leu Gly
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Thr Ser Lys Cys Pro Gly Arg Tyr Phe Ala Val Asn Glu Met Lys Leu

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 Lys Pro Ile Gly Leu Asn His Ser Arg Met Phe Leu Gly Ile Gln His
 480 485 490
 ccc gat tct gcc gtc tcc ttt agg tac aaa gca aaa tct tgg aga agc 1601
 Pro Asp Ser Ala Val Ser Phe Arg Tyr Lys Ala Lys Ser Trp Arg Ser
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<210> 806

<211> 507

<212> PRT

<213> Mus musculus

<400> 806

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 Leu Leu Thr Arg Arg Thr Arg Arg Pro Arg Glu Pro Pro Leu Ile Lys
 35 40 45

Gly Trp Leu Pro Tyr Leu Gly Met Ala Leu Lys Phe Phe Lys Asp Pro
 50 55 60
 Leu Thr Phe Leu Lys Thr Leu Gln Arg Gln His Gly Asp Thr Phe Thr
 65 70 75 80
 Val Phe Leu Val Gly Lys Tyr Ile Thr Phe Val Leu Asn Pro Phe Gln
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 Tyr Gln Tyr Val Thr Lys Asn Pro Lys Gln Leu Ser Phe Gln Lys Phe
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 Ser Ser Arg Leu Ser Ala Lys Ala Phe Ser Val Lys Lys Leu Leu Thr
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 Asp Asp Asp Leu Asn Glu Asp Val His Arg Ala Tyr Leu Leu Leu Gln
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 Gly Lys Pro Leu Asp Ala Leu Leu Glu Thr Met Ile Gln Glu Val Lys
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 Glu Leu Phe Glu Ser Gln Leu Leu Lys Ile Thr Asp Trp Asn Thr Glu
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 Arg Ile Phe Ala Phe Cys Gly Ser Leu Val Phe Glu Ile Thr Phe Ala
 180 185 190
 Thr Leu Tyr Gly Lys Ile Leu Ala Gly Asn Lys Lys Gln Ile Ile Ser
 195 200 205
 Glu Leu Arg Asp Asp Phe Phe Lys Phe Asp Asp Met Phe Pro Tyr Leu
 210 215 220
 Val Ser Asp Ile Pro Ile Gln Leu Leu Arg Asn Glu Glu Ser Met Gln
 225 230 235 240
 Lys Lys Ile Ile Lys Cys Leu Thr Ser Glu Lys Val Ala Gln Met Gln
 245 250 255
 Gly Gln Ser Lys Ile Val Gln Glu Ser Gln Asp Leu Leu Lys Arg Tyr
 260 265 270
 Tyr Arg His Asp Asp Ser Glu Ile Gly Ala His His Leu Gly Phe Leu

275 280 285
 Trp Ala Ser Leu Ala Asn Thr Ile Pro Ala Met Phe Trp Ala Met Tyr
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 Tyr Ile Leu Arg His Pro Glu Ala Met Glu Ala Leu Arg Asp Glu Ile
 305 310 315 320
 Asp Ser Phe Leu Gln Ser Thr Gly Gln Lys Lys Gly Pro Gly Ile Ser
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 Val His Phe Thr Arg Glu Gln Leu Asp Ser Leu Val Cys Leu Glu Ser
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 Glu Val Gln Glu Asp Met Asn Leu Ser Leu Glu Ser Lys Ser Phe Ser
 370 375 380
 Leu Arg Lys Gly Asp Phe Val Ala Leu Phe Pro Pro Leu Ile His Asn
 385 390 395 400
 Asp Pro Glu Ile Phe Asp Ala Pro Lys Glu Phe Arg Phe Asp Arg Phe
 405 410 415
 Ile Glu Asp Gly Lys Lys Lys Ser Thr Phe Phe Lys Gly Gly Lys Arg
 420 425 430
 Leu Lys Thr Tyr Val Met Pro Phe Gly Leu Gly Thr Ser Lys Cys Pro
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 Gly Arg Tyr Phe Ala Val Asn Glu Met Lys Leu Leu Leu Ile Glu Leu
 450 455 460
 Leu Thr Tyr Phe Asp Leu Glu Ile Ile Asp Arg Lys Pro Ile Gly Leu
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 Asn His Ser Arg Met Phe Leu Gly Ile Gln His Pro Asp Ser Ala Val
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 Ser Phe Arg Tyr Lys Ala Lys Ser Trp Arg Ser
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<210> 807

<211> 490

<212> DNA

<213> Mus musculus

<400> 807

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gtgtgctggt gttatcctcg ttgtccacgt ctccgttccg taatcggcca ttttgcttct 180
cctgttttct ttcttcttgt agaatacag caattgtatt gaggtagtaa tttagaatt 240
catgggcatc ttgttgcatg tagttgtcaa acagctcgtt ttctttccgc aaccttgtga 300
tgaacttctt gggcgggac acgccgacct tcttcttctg ggtggctatg ctgtggaaga 360
ggtctgccag gcaggtgaga aaggctccct ttttctggg ctgacttttg tatgctagaa 420
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<210> 808

<211> 1073

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (65).. (850)

<400> 808

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Met Lys Glu Leu Ile Leu Leu Gly Leu Tyr Leu Leu Gly Ser Ala
1 5 10 15
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Gln Gly Ala Pro Pro Gly Gln Pro Glu Glu Leu Leu Asp Ser Val Asp
20 25 30
caa caa gct tct ggt cag caa ctt tca agc gag tat ctc tca ctc gca 205
Gln Gln Ala Ser Val Gln Gln Leu Ser Ser Glu Tyr Leu Ser Leu Ala
35 40 45
aac cct tca gat gcc gag gct tta tat gaa act cct tta gat gag aag 253
Asn Pro Ser Asp Ala Glu Ala Leu Tyr Glu Thr Pro Leu Asp Glu Lys
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act ctg agt ggt cat agt tca agt gaa cag gaa tca agt gag cat gct 301
Thr Leu Ser Gly His Ser Ser Ser Glu Gln Glu Ser Ser Glu His Ala
65 70 75
gta gct gaa cat tct gca ggt gag cac tct tca gga gaa cag tct tca 349
Val Ala Glu His Ser Ala Gly Glu His Ser Ser Gly Glu Gln Ser Ser
80 85 90 95
gaa cac atg tca ggt gac cac atg tca gga gag cac ttg tca gaa cac 397
Glu His Met Ser Gly Asp His Met Ser Gly Glu His Leu Ser Glu His
100 105 110
act tca gag gag cac tcc tct ggc gag cac act tcc acc gag cac act 445
Thr Ser Glu Glu His Ser Ser Gly Glu His Thr Ser Thr Glu His Thr
115 120 125
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Ser Gly Glu Gln Pro Ala Thr Glu Gln Ser Ser Ser Asp Gln Pro Ser
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gaa gca tct tca ggt gaa gtt tct ggt gac gaa gca ggt gaa cag gtg 541
Glu Ala Ser Ser Gly Glu Val Ser Gly Asp Glu Ala Gly Glu Gln Val
145 150 155

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 Ser Ser Glu Thr Asn Asp Lys Glu Asn Asp Ala Met Ser Thr Pro Leu
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 Pro Ser Thr Ser Ala Ala Ile Thr Leu Asn Cys His Thr Cys Ala Tyr
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 atg aat gat gat gca aaa tgt ctc cgt gga gaa gga gta tgc acc act 685
 Met Asn Asp Asp Ala Lys Cys Leu Arg Gly Glu Gly Val Cys Thr Thr
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 Gln Asn Ser Gln Gln Cys Met Leu Lys Lys Ile Phe Glu Gly Gly Lys
 210 215 220
 ctc cag ttc atg gtt caa ggg tgt gag aac atg tgc cca tct atg aac 781
 Leu Gln Phe Met Val Gln Gly Cys Glu Asn Met Cys Pro Ser Met Asn
 225 230 235
 ctc ttc tct cat gga aca aga atg caa att atg tgc tgt cgg aat gaa 829
 Leu Phe Ser His Gly Thr Arg Met Gln Ile Met Cys Cys Arg Asn Glu
 240 245 250 255
 cct ctc tgc aac aag gtc tag atgcccgtgc cctacttctt gctctgactt 880
 Pro Leu Cys Asn Lys Val
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<211> 261

<212> PRT

<213> Mus musculus

<400> 809

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 35 40 45
 Pro Ser Asp Ala Glu Ala Leu Tyr Glu Thr Pro Leu Asp Glu Lys Thr
 50 55 60
 Leu Ser Gly His Ser Ser Ser Glu Gln Glu Ser Ser Glu His Ala Val
 65 70 75 80
 Ala Glu His Ser Ala Gly Glu His Ser Ser Gly Glu Gln Ser Ser Glu
 85 90 95
 His Met Ser Gly Asp His Met Ser Gly Glu His Leu Ser Glu His Thr
 100 105 110
 Ser Glu Glu His Ser Ser Gly Glu His Thr Ser Thr Glu His Thr Ser
 115 120 125
 Gly Glu Gln Pro Ala Thr Glu Gln Ser Ser Ser Asp Gln Pro Ser Glu
 130 135 140
 Ala Ser Ser Gly Glu Val Ser Gly Asp Glu Ala Gly Glu Gln Val Ser
 145 150 155 160
 Ser Glu Thr Asn Asp Lys Glu Asn Asp Ala Met Ser Thr Pro Leu Pro
 165 170 175
 Ser Thr Ser Ala Ala Ile Thr Leu Asn Cys His Thr Cys Ala Tyr Met
 180 185 190
 Asn Asp Asp Ala Lys Cys Leu Arg Gly Glu Gly Val Cys Thr Thr Gln
 195 200 205

Asn Ser Gln Gln Cys Met Leu Lys Lys Ile Phe Glu Gly Gly Lys Leu
 210 215 220
 Gln Phe Met Val Gln Gly Cys Glu Asn Met Cys Pro Ser Met Asn Leu
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<210> 810

<211> 108

<212> DNA

<213> Mus musculus

<400> 810

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<210> 811

<211> 2831

<212> DNA

<213> Mus musculus

<220>

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<222> (328).. (1941)

<400> 811

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Met Ala Trp Pro Gly Thr Gly Pro Ser

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Ser Arg Gly Ala Pro Gly Gly Val Gly Leu Arg Leu Gly Leu Leu Leu			
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Gln Phe Leu Leu Leu Leu Arg Pro Thr Leu Gly Phe Gly Asp Glu Glu			
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Glu Arg Arg Cys Asp Pro Ile Arg Ile Ala Met Cys Gln Asn Leu Gly			
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tac aac gtg acc aag atg ccc aac tta gtg gga cac gag ctg cag aca	546		
Tyr Asn Val Thr Lys Met Pro Asn Leu Val Gly His Glu Leu Gln Thr			
60 65 70			
gac gcc gag ctg cag ctg aca act ttc acg ccg ctc atc cag tac ggc	594		
Asp Ala Glu Leu Gln Leu Thr Thr Phe Thr Pro Leu Ile Gln Tyr Gly			
75 80 85			
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Cys Ser Ser Gln Leu Gln Phe Phe Leu Cys Ser Val Tyr Val Pro Met			
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Cys Thr Glu Lys Ile Asn Ile Pro Ile Gly Pro Cys Gly Gly Met Cys			
110 115 120			
ctt tca gtc aag aga cgc tgt gaa cca gtc ctg aga gaa ttt ggg ttt	738		

Leu	Ser	Val	Lys	Arg	Arg	Cys	Glu	Pro	Val	Leu	Arg	Glu	Phe	Gly	Phe		
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gcc	tgg	ccc	gac	acc	ctg	aac	tgc	agc	aag	ttc	ccg	ccc	cag	aac	gac	786	
Ala	Trp	Pro	Asp	Thr	Leu	Asn	Cys	Ser	Lys	Phe	Pro	Pro	Gln	Asn	Asp		
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cac	aac	cac	atg	tgc	atg	gaa	gga	cca	ggt	gat	gaa	gag	gtt	ccc	tig	834	
His	Asn	His	Met	Cys	Met	Glu	Gly	Pro	Gly	Asp	Glu	Glu	Val	Pro	Leu		
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Pro	His	Lys	Thr	Pro	Ile	Gln	Pro	Gly	Glu	Glu	Cys	His	Ser	Val	Gly		
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Ser	Asn	Ser	Asp	Gln	Tyr	Ile	Trp	Val	Lys	Arg	Ser	Leu	Asn	Cys	Val		
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ctc	aag	tgt	ggc	tac	gat	gct	ggc	ttg	tac	agc	cgc	tca	gct	aag	gag	978	
Leu	Lys	Cys	Gly	Tyr	Asp	Ala	Gly	Leu	Tyr	Ser	Arg	Ser	Ala	Lys	Glu		
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ttc	acg	gat	att	tgg	atg	gct	gtg	tgg	gcc	agc	ctc	tgc	ttc	atc	tcc	1026	
Phe	Thr	Asp	Ile	Trp	Met	Ala	Val	Trp	Ala	Ser	Leu	Cys	Phe	Ile	Ser		
			220					225					230				
acc	acc	ttc	acc	gtg	ctg	acc	ttc	ctg	att	gat	tca	tcc	agg	ttt	tct	1074	
Thr	Thr	Phe	Thr	Val	Leu	Thr	Phe	Leu	Ile	Asp	Ser	Ser	Arg	Phe	Ser		
			235					240					245				
tac	cct	gag	cgc	ccc	atc	ata	ttt	ctc	agt	atg	tgc	tat	aat	att	tat	1122	
Tyr	Pro	Glu	Arg	Pro	Ile	Ile	Phe	Leu	Ser	Met	Cys	Tyr	Asn	Ile	Tyr		
			250					255					260		265		
agc	att	gct	tat	att	gtt	cgg	ctg	act	gta	ggc	cgg	gaa	agg	ata	tcc	1170	
Ser	Ile	Ala	Tyr	Ile	Val	Arg	Leu	Thr	Val	Gly	Arg	Glu	Arg	Ile	Ser		
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 Cys Asp Phe Glu Glu Ala Ala Glu Pro Val Leu Ile Gln Glu Gly Leu
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 aag aac aca gga tgt gca ata att ttc ttg ctg atg tac ttt ttt gga 1266
 Lys Asn Thr Gly Cys Ala Ile Ile Phe Leu Leu Met Tyr Phe Phe Gly
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 atg gcc agc tcc att tgg tgg gtt att ctg aca ctc act tgg ttt ttg 1314
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 Ala Ala Gly Leu Lys Trp Gly His Glu Ala Ile Glu Met His Ser Ser
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 tat ttc cac atc gca gcc tgg gct att ccc gca gtg aaa acc att gtc 1410
 Tyr Phe His Ile Ala Ala Trp Ala Ile Pro Ala Val Lys Thr Ile Val
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 atc ttg att atg aga cta gtg gat gcc gat gaa ctg act ggc ttg tgc 1458
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 Pro Leu Phe Thr Tyr Leu Val Ile Gly Thr Leu Phe Ile Ala Ala Gly
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 410 415 420 425
 aag aca gac aag ttg gaa agg cta atg gtc aag atc ggg gtc ttc tca 1650
 Lys Thr Asp Lys Leu Glu Arg Leu Met Val Lys Ile Gly Val Phe Ser

430	435	440	
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Val Leu Tyr Thr Val Pro Ala Thr Cys Val Ile Ala Cys Tyr Phe Tyr			
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Glu Ile Ser Asn Trp Ala Leu Phe Arg Tyr Ser Ala Asp Asp Ser Asn			
460	465	470	
atg gca gtt gaa atg ttg aaa att ttt atg tct ttg ctc gtg ggc atc			1794
Met Ala Val Glu Met Leu Lys Ile Phe Met Ser Leu Leu Val Gly Ile			
475	480	485	
act tca ggc atg tgg att tgg tct gcc aaa act ctt cac acg tgg caa			1842
Thr Ser Gly Met Trp Ile Trp Ser Ala Lys Thr Leu His Thr Trp Gln			
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aag tgt tct aac cga ttg gtg aat tct ggg aag gta aag aga gag aag			1890
Lys Cys Ser Asn Arg Leu Val Asn Ser Gly Lys Val Lys Arg Glu Lys			
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agg ggg aat ggt tgg gtg aag cca gga aaa ggc aac gag act gtg gta			1938
Arg Gly Asn Gly Trp Val Lys Pro Gly Lys Gly Asn Glu Thr Val Val			
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<211> 537

<212> PRT

<213> Mus musculus

<400> 812

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			20					25					30		
Pro	Thr	Leu	Gly	Phe	Gly	Asp	Glu	Glu	Glu	Arg	Arg	Cys	Asp	Pro	Ile
			35					40					45		
Arg	Ile	Ala	Met	Cys	Gln	Asn	Leu	Gly	Tyr	Asn	Val	Thr	Lys	Met	Pro
			50					55					60		
Asn	Leu	Val	Gly	His	Glu	Leu	Gln	Thr	Asp	Ala	Glu	Leu	Gln	Leu	Thr
			65					70					75		80
Thr	Phe	Thr	Pro	Leu	Ile	Gln	Tyr	Gly	Cys	Ser	Ser	Gln	Leu	Gln	Phe
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Phe	Leu	Cys	Ser	Val	Tyr	Val	Pro	Met	Cys	Thr	Glu	Lys	Ile	Asn	Ile
							100								110
Pro	Ile	Gly	Pro	Cys	Gly	Gly	Met	Cys	Leu	Ser	Val	Lys	Arg	Arg	Cys
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 Gly Pro Gly Asp Glu Glu Val Pro Leu Pro His Lys Thr Pro Ile Gln
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 Pro Gly Glu Glu Cys His Ser Val Gly Ser Asn Ser Asp Gln Tyr Ile
 180 185 190
 Trp Val Lys Arg Ser Leu Asn Cys Val Leu Lys Cys Gly Tyr Asp Ala
 195 200 205
 Gly Leu Tyr Ser Arg Ser Ala Lys Glu Phe Thr Asp Ile Trp Met Ala
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 Val Trp Ala Ser Leu Cys Phe Ile Ser Thr Thr Phe Thr Val Leu Thr
 225 230 235 240
 Phe Leu Ile Asp Ser Ser Arg Phe Ser Tyr Pro Glu Arg Pro Ile Ile
 245 250 255
 Phe Leu Ser Met Cys Tyr Asn Ile Tyr Ser Ile Ala Tyr Ile Val Arg
 260 265 270
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 275 280 285
 Glu Pro Val Leu Ile Gln Glu Gly Leu Lys Asn Thr Gly Cys Ala Ile
 290 295 300
 Ile Phe Leu Leu Met Tyr Phe Phe Gly Met Ala Ser Ser Ile Trp Trp
 305 310 315 320
 Val Ile Leu Thr Leu Thr Trp Phe Leu Ala Ala Gly Leu Lys Trp Gly
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 Ala Ile Pro Ala Val Lys Thr Ile Val Ile Leu Ile Met Arg Leu Val

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Ile Gly Thr Leu Phe Ile Ala Ala Gly Leu Val Ala Leu Phe Lys Ile		
405	410	415
Arg Ser Asn Leu Gln Lys Asp Gly Thr Lys Thr Asp Lys Leu Glu Arg		
420	425	430
Leu Met Val Lys Ile Gly Val Phe Ser Val Leu Tyr Thr Val Pro Ala		
435	440	445
Thr Cys Val Ile Ala Cys Tyr Phe Tyr Glu Ile Ser Asn Trp Ala Leu		
450	455	460
Phe Arg Tyr Ser Ala Asp Asp Ser Asn Met Ala Val Glu Met Leu Lys		
465	470	475
Ile Phe Met Ser Leu Leu Val Gly Ile Thr Ser Gly Met Trp Ile Trp		
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<211> 2373

<212> DNA

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<220>

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<222> (101).. (2224)

<400> 813

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Asp Ser Cys Ile Gln Phe Thr Arg His Ala Ser Asp Val Leu Leu Asn
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Leu Asn Arg Leu Arg Ser Arg Asp Ile Leu Thr Asp Val Val Ile Val
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gtg agc cgt gag cag ttt aga gcc cat aag aca gtg ctc atg gcc tgc 259
Val Ser Arg Glu Gln Phe Arg Ala His Lys Thr Val Leu Met Ala Cys
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Ser Gly Leu Phe Tyr Ser Ile Phe Thr Asp Gln Leu Lys Cys Asn Leu
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Ser Val Ile Asn Leu Asp Pro Glu Ile Ser Pro Glu Gly Phe Cys Ile
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Leu Leu Asp Phe Met Tyr Thr Ser Arg Leu Asn Leu Arg Glu Gly Asn
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Ile Met Ala Val Met Thr Thr Ala Met Tyr Leu Gln Met Glu His Val

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120	125	130	
cct gca ctt aaa cct ccc cgt gaa gag ttc ctg aac agc cgg atg ctg	547		
Pro Ala Leu Lys Pro Pro Arg Glu Glu Phe Leu Asn Ser Arg Met Leu			
135	140	145	
atg ccc cat gac atc atg gcc tac cga ggt cgt gag gtc gtg gag aac	595		
Met Pro His Asp Ile Met Ala Tyr Arg Gly Arg Glu Val Val Glu Asn			
150	155	160	165
aat atg cca ctg aga aat act ccc ggg tgt gag agc aga gct ttt gct	643		
Asn Met Pro Leu Arg Asn Thr Pro Gly Cys Glu Ser Arg Ala Phe Ala			
170	175	180	
cct cct ctg tac agt ggc ctg tca aca cca cca gcc tct tat ccc atg	691		
Pro Pro Leu Tyr Ser Gly Leu Ser Thr Pro Pro Ala Ser Tyr Pro Met			
185	190	195	
tac agc cat ctc ccg ctc agc acc ttc ctc ttc tct gat gag gag ctc	739		
Tyr Ser His Leu Pro Leu Ser Thr Phe Leu Phe Ser Asp Glu Glu Leu			
200	205	210	
cga gat gcc ccc cga atg cct gtg gcc aac cct ttt ccc aag gag cgt	787		
Arg Asp Ala Pro Arg Met Pro Val Ala Asn Pro Phe Pro Lys Glu Arg			
215	220	225	
gcc ctc ccc tgc gac agt gcc agg caa gtc cct aat gag tat agc agg	835		
Ala Leu Pro Cys Asp Ser Ala Arg Gln Val Pro Asn Glu Tyr Ser Arg			
230	235	240	245
cca gcc atg gag gtg tcc ccc agt ttg tgt cac agc aac atc tac tcg	883		
Pro Ala Met Glu Val Ser Pro Ser Leu Cys His Ser Asn Ile Tyr Ser			
250	255	260	
ccc aag gag gca gtc cca gag gag gct cgg agt gac ata cac tac agt	931		

Pro Lys Glu Ala Val Pro Glu Glu Ala Arg Ser Asp Ile His Tyr Ser	
265	270
275	
gig cct gag ggc ccc aag cct gct gtc cct tct gct cgg aat gct cca	979
Val Pro Glu Gly Pro Lys Pro Ala Val Pro Ser Ala Arg Asn Ala Pro	
280	285
290	
tac ttc ccc tgt gac aaa gcc agc aaa gaa gaa gag aga cct tct tcg	1027
Tyr Phe Pro Cys Asp Lys Ala Ser Lys Glu Glu Glu Arg Pro Ser Ser	
295	300
305	
gag gat gag att gcc ctg cat ttc gag ccc ccc aat gca ccc ttg aac	1075
Glu Asp Glu Ile Ala Leu His Phe Glu Pro Pro Asn Ala Pro Leu Asn	
310	315
320	325
cgg aag ggt ctg gtt agt ccc cag agt ccc cag aaa tcc gac tgc cag	1123
Arg Lys Gly Leu Val Ser Pro Gln Ser Pro Gln Lys Ser Asp Cys Gln	
330	335
340	
ccc aac tca ccc aca gag tcc tgc agc agc aag aac gcc tgc atc ctt	1171
Pro Asn Ser Pro Thr Glu Ser Cys Ser Ser Lys Asn Ala Cys Ile Leu	
345	350
355	
cag gcc tct ggc tct ccg cca gcc aag agc ccc act gac ccg aaa gcc	1219
Gln Ala Ser Gly Ser Pro Pro Ala Lys Ser Pro Thr Asp Pro Lys Ala	
360	365
370	
tgc aac tgg aag aag tat aag ttc atc gtt ctc aac agc ctc aat cag	1267
Cys Asn Trp Lys Lys Tyr Lys Phe Ile Val Leu Asn Ser Leu Asn Gln	
375	380
385	
aat gcc aaa ccc gag ggc tct gag cag gca gag ctg ggt cgc ctc tcc	1315
Asn Ala Lys Pro Glu Gly Ser Glu Gln Ala Glu Leu Gly Arg Leu Ser	
390	395
400	405
cct cga gcc tac cct gca ccg ccc gct tgc cag ccg cct atg gag ccc	1363
Pro Arg Ala Tyr Pro Ala Pro Pro Ala Cys Gln Pro Pro Met Glu Pro	
410	415
420	

gcg aac ctt gat ctc cag tcc ccg acc aag ctc agt gcc agt ggg gag 1411
 Ala Asn Leu Asp Leu Gln Ser Pro Thr Lys Leu Ser Ala Ser Gly Glu
 425 430 435
 gac tct acc atc ccc caa gcc agc cgg ctc aat aat ctc gtg aac agg 1459
 Asp Ser Thr Ile Pro Gln Ala Ser Arg Leu Asn Asn Leu Val Asn Arg
 440 445 450
 tcc ctg gga ggc tcc ccc cga agc agc agt gag agt cac tca cca ctc 1507
 Ser Leu Gly Gly Ser Pro Arg Ser Ser Ser Glu Ser His Ser Pro Leu
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 tac atg cac ccc cca aag tgc aca tcc tgc ggc tct cag tcc cca cag 1555
 Tyr Met His Pro Pro Lys Cys Thr Ser Cys Gly Ser Gln Ser Pro Gln
 470 475 480 485
 cat aca gag atg tgc ctc cat act gct ggg ccc acg ttc ccg gag gag 1603
 His Thr Glu Met Cys Leu His Thr Ala Gly Pro Thr Phe Pro Glu Glu
 490 495 500
 atg ggg gaa acc cag tca gag tat tcg gat tct agc tgt gag aat ggg 1651
 Met Gly Glu Thr Gln Ser Glu Tyr Ser Asp Ser Ser Cys Glu Asn Gly
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 acc ttc ttc tgc aac gaa tgt gac tgc cgt ttc tct gag gag gcc tcg 1699
 Thr Phe Phe Cys Asn Glu Cys Asp Cys Arg Phe Ser Glu Glu Ala Ser
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 ctc aag agg cac acg ctg cag acg cac agt gac aaa cca tac aaa tgt 1747
 Leu Lys Arg His Thr Leu Gln Thr His Ser Asp Lys Pro Tyr Lys Cys
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 gat cgc tgc cag gcc tcc ttc cgc tac aag ggc aac ctc gcc agc cac 1795
 Asp Arg Cys Gln Ala Ser Phe Arg Tyr Lys Gly Asn Leu Ala Ser His
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 aag act gtc cac acg ggt gag aaa ccc tat cgc tgt aac att tgt gga 1843
 Lys Thr Val His Thr Gly Glu Lys Pro Tyr Arg Cys Asn Ile Cys Gly

570	575	580	
gcg cag ttc aat cgg cca gcc aac ctg aag acc cac act cga att cac	1891		
Ala Gln Phe Asn Arg Pro Ala Asn Leu Lys Thr His Thr Arg Ile His			
585	590	595	
tct gga gaa aag ccc tac aaa tgt gaa acc tgt ggg gcc agg ttt gtt	1939		
Ser Gly Glu Lys Pro Tyr Lys Cys Glu Thr Cys Gly Ala Arg Phe Val			
600	605	610	
cag gtg gcc cac ctc cgt gcc cac gtg ctc atc cac act gga gag aag	1987		
Gln Val Ala His Leu Arg Ala His Val Leu Ile His Thr Gly Glu Lys			
615	620	625	
ccg tac ccc tgt gaa atc tgt ggc act cgc ttc cgg cac ctt cag act	2035		
Pro Tyr Pro Cys Glu Ile Cys Gly Thr Arg Phe Arg His Leu Gln Thr			
630	635	640	645
ctg aag agc cat ctg cgc atc cac aca gga gag aaa cct tac cat tgt	2083		
Leu Lys Ser His Leu Arg Ile His Thr Gly Glu Lys Pro Tyr His Cys			
650	655	660	
gag aag tgt aac ctg cac ttt cgt cac aaa agc caa ctg cga ctt cat	2131		
Glu Lys Cys Asn Leu His Phe Arg His Lys Ser Gln Leu Arg Leu His			
665	670	675	
ttg cgc cag aag cac ggc gcc atc acc aac acc aag gtg caa tac cgc	2179		
Leu Arg Gln Lys His Gly Ala Ile Thr Asn Thr Lys Val Gln Tyr Arg			
680	685	690	
gtg tcg gcc gct gac ctg cct ccg gag ctc ccc aaa gcc tgc tga	2224		
Val Ser Ala Ala Asp Leu Pro Pro Glu Leu Pro Lys Ala Cys			
695	700	705	
atgaagcatg gagtgttcct cgccctttcc tctccagccc cttctcagaa tctacccaaa	2284		
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<210> 814

<211> 707

<212> PRT

<213> Mus musculus

<400> 814

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          20             25             30
Asp Val Val Ile Val Val Ser Arg Glu Gln Phe Arg Ala His Lys Thr
          35             40             45
Val Leu Met Ala Cys Ser Gly Leu Phe Tyr Ser Ile Phe Thr Asp Gln
          50             55             60
Leu Lys Cys Asn Leu Ser Val Ile Asn Leu Asp Pro Glu Ile Ser Pro
          65             70             75             80
Glu Gly Phe Cys Ile Leu Leu Asp Phe Met Tyr Thr Ser Arg Leu Asn
          85             90             95
Leu Arg Glu Gly Asn Ile Met Ala Val Met Thr Thr Ala Met Tyr Leu
          100            105            110
Gln Met Glu His Val Val Asp Thr Cys Arg Lys Phe Ile Lys Ala Ser
          115            120            125
Glu Ala Glu Met Ala Pro Ala Leu Lys Pro Pro Arg Glu Glu Phe Leu
          130            135            140
Asn Ser Arg Met Leu Met Pro His Asp Ile Met Ala Tyr Arg Gly Arg
          145            150            155            160
Glu Val Val Glu Asn Asn Met Pro Leu Arg Asn Thr Pro Gly Cys Glu
          165            170            175
Ser Arg Ala Phe Ala Pro Pro Leu Tyr Ser Gly Leu Ser Thr Pro Pro

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180	185	190
Ala Ser Tyr Pro Met Tyr Ser His Leu Pro Leu Ser Thr Phe Leu Phe		
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Ser Asp Glu Glu Leu Arg Asp Ala Pro Arg Met Pro Val Ala Asn Pro		
210	215	220
Phe Pro Lys Glu Arg Ala Leu Pro Cys Asp Ser Ala Arg Gln Val Pro		
225	230	235
Asn Glu Tyr Ser Arg Pro Ala Met Glu Val Ser Pro Ser Leu Cys His		
245	250	255
Ser Asn Ile Tyr Ser Pro Lys Glu Ala Val Pro Glu Glu Ala Arg Ser		
260	265	270
Asp Ile His Tyr Ser Val Pro Glu Gly Pro Lys Pro Ala Val Pro Ser		
275	280	285
Ala Arg Asn Ala Pro Tyr Phe Pro Cys Asp Lys Ala Ser Lys Glu Glu		
290	295	300
Glu Arg Pro Ser Ser Glu Asp Glu Ile Ala Leu His Phe Glu Pro Pro		
305	310	315
Asn Ala Pro Leu Asn Arg Lys Gly Leu Val Ser Pro Gln Ser Pro Gln		
325	330	335
Lys Ser Asp Cys Gln Pro Asn Ser Pro Thr Glu Ser Cys Ser Ser Lys		
340	345	350
Asn Ala Cys Ile Leu Gln Ala Ser Gly Ser Pro Pro Ala Lys Ser Pro		
355	360	365
Thr Asp Pro Lys Ala Cys Asn Trp Lys Lys Tyr Lys Phe Ile Val Leu		
370	375	380
Asn Ser Leu Asn Gln Asn Ala Lys Pro Glu Gly Ser Glu Gln Ala Glu		
385	390	395
Leu Gly Arg Leu Ser Pro Arg Ala Tyr Pro Ala Pro Pro Ala Cys Gln		
405	410	415

Pro Pro Met Glu Pro Ala Asn Leu Asp Leu Gln Ser Pro Thr Lys Leu
 420 425 430
 Ser Ala Ser Gly Glu Asp Ser Thr Ile Pro Gln Ala Ser Arg Leu Asn
 435 440 445
 Asn Leu Val Asn Arg Ser Leu Gly Gly Ser Pro Arg Ser Ser Ser Glu
 450 455 460
 Ser His Ser Pro Leu Tyr Met His Pro Pro Lys Cys Thr Ser Cys Gly
 465 470 475 480
 Ser Gln Ser Pro Gln His Thr Glu Met Cys Leu His Thr Ala Gly Pro
 485 490 495
 Thr Phe Pro Glu Glu Met Gly Glu Thr Gln Ser Glu Tyr Ser Asp Ser
 500 505 510
 Ser Cys Glu Asn Gly Thr Phe Phe Cys Asn Glu Cys Asp Cys Arg Phe
 515 520 525
 Ser Glu Glu Ala Ser Leu Lys Arg His Thr Leu Gln Thr His Ser Asp
 530 535 540
 Lys Pro Tyr Lys Cys Asp Arg Cys Gln Ala Ser Phe Arg Tyr Lys Gly
 545 550 555 560
 Asn Leu Ala Ser His Lys Thr Val His Thr Gly Glu Lys Pro Tyr Arg
 565 570 575
 Cys Asn Ile Cys Gly Ala Gln Phe Asn Arg Pro Ala Asn Leu Lys Thr
 580 585 590
 His Thr Arg Ile His Ser Gly Glu Lys Pro Tyr Lys Cys Glu Thr Cys
 595 600 605
 Gly Ala Arg Phe Val Gln Val Ala His Leu Arg Ala His Val Leu Ile
 610 615 620
 His Thr Gly Glu Lys Pro Tyr Pro Cys Glu Ile Cys Gly Thr Arg Phe
 625 630 635 640
 Arg His Leu Gln Thr Leu Lys Ser His Leu Arg Ile His Thr Gly Glu

645 650 655
 Lys Pro Tyr His Cys Glu Lys Cys Asn Leu His Phe Arg His Lys Ser
 660 665 670
 Gln Leu Arg Leu His Leu Arg Gln Lys His Gly Ala Ile Thr Asn Thr
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 690 695 700
 Lys Ala Cys
 705

<210> 815

<211> 494

<212> DNA

<213> Mus musculus

<400> 815

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 aacttggcct ggtggacctc tgcctccgcc tggctcctat tccagcagct actctatggt 180
 ctcatctatc acagctgggt ccaggcagac ccggcagaag ctgagggcag ccccgagacg 240
 cgcgagacag ctgcgicatt aaacagaccc agtactactt cggctcgggt aacgcattct 300
 ataatgccat cattgactgc ggaaactgca gcaggctgtt ccatgcgcag agactgacca 360
 acaccaatct cctgttcgtg gtggccgaga agccgctgtg cagccagtgc gaggcgggcc 420
 ggctgctgca gaaggagaca cactcggacg gcccgagaca gttgagctg gtgcagagac 480
 cgagataccg aaga 494

<210> 816

<211> 2652

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (517).. (2151)

<400> 816

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cgccatctct gtctgggtatc tatcgtgttg cccaagtcaa catccccacc cccaaagaat 180
ttcaagaaga caaacaagcc aagactatgt aagccatntc tctttgactc tgagaacaac 240
ctgggcctag aagatggtag aactatatcc cagcagcacg agtttgtgtg atgcactctc 300
atgaaaggaa agcaccagag tttcagccat ggaattgaag atatggatgc attcgacttt 360
ctagaaattc acctttctag aaacctatag aggtccagga tcctctatag actttgactg 420
acagaagtna ccaaattgga actacttgaa cagaaattaa ttccttccca tggnaaaata 480
gatctaaagg agctgtgaaa tcagctgcaa ctgaaa atg tct gac agc ttg gat 534

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Met Ser Asp Ser Leu Asp

1

5

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aac gaa gaa aaa ccc cca gct ccc cca ctg agg atg aac agt aac aac 582

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Asn Glu Glu Lys Pro Pro Ala Pro Pro Leu Arg Met Asn Ser Asn Asn

10

15

20

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cga gac tct tca gca ctc aac cac agc tcc aaa cca ctg ccc atg gcc 630

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Arg Asp Ser Ser Ala Leu Asn His Ser Ser Lys Pro Leu Pro Met Ala

25

30

35

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ccg gaa gag aag aat aag aaa gcc agg ctt cgc tct atc ttc cca gga 678

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Pro Glu Glu Lys Asn Lys Lys Ala Arg Leu Arg Ser Ile Phe Pro Gly

40

45

50

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gga ggg gat aaa acc aat aag aag aaa gag aaa gag cgc cca gag atc 726

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Gly Gly Asp Lys Thr Asn Lys Lys Lys Glu Lys Glu Arg Pro Glu Ile

55	60	65	70	
tct ctt cct tca gac ttt gag cat acg att cat gtg ggt ttt gat gca	774			
Ser Leu Pro Ser Asp Phe Glu His Thr Ile His Val Gly Phe Asp Ala				
	75	80	85	
gtc acc ggg gaa ttc act gga att cct gag caa tgg gca cga cta ctc	822			
Val Thr Gly Glu Phe Thr Gly Ile Pro Glu Gln Trp Ala Arg Leu Leu				
	90	95	100	
caa acc tcc aac ata aca aag ctg gaa cag aag aag aac cca caa gct	870			
Gln Thr Ser Asn Ile Thr Lys Leu Glu Gln Lys Lys Asn Pro Gln Ala				
	105	110	115	
gtt ctt gat gtt ctc aag ttc tac gac tcc aaa gaa acg gtc aac aac	918			
Val Leu Asp Val Leu Lys Phe Tyr Asp Ser Lys Glu Thr Val Asn Asn				
	120	125	130	
cag aaa tat atg agc ttt acg tca gga gat aaa agt gcc cat gga tac	966			
Gln Lys Tyr Met Ser Phe Thr Ser Gly Asp Lys Ser Ala His Gly Tyr				
	135	140	145	150
ata gca gca cat cag tcg aat acc aaa aca ggt tcg gaa cct cct ttg	1014			
Ile Ala Ala His Gln Ser Asn Thr Lys Thr Gly Ser Glu Pro Pro Leu				
	155	160	165	
gct cct cct gta tct gaa gaa gag gat gaa gaa gag gaa gag gaa gaa	1062			
Ala Pro Pro Val Ser Glu Glu Glu Asp Glu Glu Glu Glu Glu Glu Glu				
	170	175	180	
gat gac aat gaa cct ccg cct gtc att gca cca aga cca gag cat aca	1110			
Asp Asp Asn Glu Pro Pro Pro Val Ile Ala Pro Arg Pro Glu His Thr				
	185	190	195	
aaa tca atc tat act cgc tcc gtg gtt gag tca att gct tca cca gct	1158			
Lys Ser Ile Tyr Thr Arg Ser Val Val Glu Ser Ile Ala Ser Pro Ala				
	200	205	210	
gca cca aat aaa gaa gat atc cca cct tct gct gag aat gcc aat tcc	1206			

Ala Pro Asn Lys Glu Asp Ile Pro Pro Ser Ala Glu Asn Ala Asn Ser
 215 220 225 230
 acc act ttg tac agg aat aca gat cgg caa aga aaa aag tcc aag atg 1254
 Thr Thr Leu Tyr Arg Asn Thr Asp Arg Gln Arg Lys Lys Ser Lys Met
 235 240 245
 acg gat gag gag atc cta gag aag ctg aga agc att gtg agt gtt ggg 1302
 Thr Asp Glu Glu Ile Leu Glu Lys Leu Arg Ser Ile Val Ser Val Gly
 250 255 260
 gac cca aag aag aaa tat acg aga ttg gaa aaa att ggc caa ggg gca 1350
 Asp Pro Lys Lys Lys Tyr Thr Arg Leu Glu Lys Ile Gly Gln Gly Ala
 265 270 275
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 Ser Gly Thr Val Tyr Thr Ala Leu Asp Ile Ala Thr Gly Gln Glu Val
 280 285 290
 gcc ata aag caa atg aac ctt caa cag cag ccc aaa aag gaa tta att 1446
 Ala Ile Lys Gln Met Asn Leu Gln Gln Gln Pro Lys Lys Glu Leu Ile
 295 300 305 310
 att aat gaa att ctt gtc atg agg gaa aat aag aac ccc aat att gtc 1494
 Ile Asn Glu Ile Leu Val Met Arg Glu Asn Lys Asn Pro Asn Ile Val
 315 320 325
 aat tat tta gat agc tac tta gtg ggt gat gaa ctg tgg gta gtc atg 1542
 Asn Tyr Leu Asp Ser Tyr Leu Val Gly Asp Glu Leu Trp Val Val Met
 330 335 340
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 Glu Tyr Leu Ala Gly Gly Ser Leu Thr Asp Val Val Thr Glu Thr Cys
 345 350 355
 atg gat gta gga cag ata gca gct gtc tgt aga gag tgc ctc caa gcc 1638
 Met Asp Val Gly Gln Ile Ala Ala Val Cys Arg Glu Cys Leu Gln Ala
 360 365 370

ctg gat ttc ttg cac tca aac caa gtg atc cac aga gac ata aag agc 1686
 Leu Asp Phe Leu His Ser Asn Gln Val Ile His Arg Asp Ile Lys Ser
 375 380 385 390
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 Gly Phe Cys Ala Gln Ile Thr Pro Glu Gln Ser Lys Arg Ser Thr Met
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 gtg gga act ccc tat tgg atg gca cct gaa gtg gta act cga aaa gct 1830
 Val Gly Thr Pro Tyr Trp Met Ala Pro Glu Val Val Thr Arg Lys Ala
 425 430 435
 tat ggt cca aaa gtt gat atc tgg tct ctg gga atc atg gcc att gaa 1878
 Tyr Gly Pro Lys Val Asp Ile Trp Ser Leu Gly Ile Met Ala Ile Glu
 440 445 450
 atg gtg gaa ggt gaa ccc cct tac ctt aat gaa aat cca ctc agg gcc 1926
 Met Val Glu Gly Glu Pro Pro Tyr Leu Asn Glu Asn Pro Leu Arg Ala
 455 460 465 470
 tta tat ctg ata gcc act aat ggg acc cca gag ctc cag aat cct gag 1974
 Leu Tyr Leu Ile Ala Thr Asn Gly Thr Pro Glu Leu Gln Asn Pro Glu
 475 480 485
 aga ctg tca gct gta ttc cat gac ttc tta aat cgc tgt ctt gag atg 2022
 Arg Leu Ser Ala Val Phe His Asp Phe Leu Asn Arg Cys Leu Glu Met
 490 495 500
 gat gtg gat aga aga gga tct gct aag gag ctt ttg cag cat ccg ttt 2070
 Asp Val Asp Arg Arg Gly Ser Ala Lys Glu Leu Leu Gln His Pro Phe
 505 510 515
 tta aaa tta gcc aag cct ctg tct agt ctc act cct ctg att atc gcc 2118
 Leu Lys Leu Ala Lys Pro Leu Ser Ser Leu Thr Pro Leu Ile Ile Ala

520	525	530	
gca aag gaa gca att aag aac agt agc cgt tag aactgcaagc cttacccctc 2171			
Ala Lys Glu Ala Ile Lys Asn Ser Ser Arg			
535	540	545	
nccgtctcca ggatgagtaa gactgaaata aaactctgct gctgcaggat ccacagaaga 2231			
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<210> 817

<211> 544

<212> PRT

<213> Mus musculus

<400> 817

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Lys Pro Leu Pro Met Ala Pro Glu Glu Lys Asn Lys Lys Ala Arg Leu

35 40 45 .

Arg Ser Ile Phe Pro Gly Gly Gly Asp Lys Thr Asn Lys Lys Lys Glu

50 55 60

Lys Glu Arg Pro Glu Ile Ser Leu Pro Ser Asp Phe Glu His Thr Ile

65	70	75	80
His Val Gly Phe Asp Ala Val Thr Gly Glu Phe Thr Gly Ile Pro Glu			
	85	90	95
Gln Trp Ala Arg Leu Leu Gln Thr Ser Asn Ile Thr Lys Leu Glu Gln			
	100	105	110
Lys Lys Asn Pro Gln Ala Val Leu Asp Val Leu Lys Phe Tyr Asp Ser			
	115	120	125
Lys Glu Thr Val Asn Asn Gln Lys Tyr Met Ser Phe Thr Ser Gly Asp			
	130	135	140
Lys Ser Ala His Gly Tyr Ile Ala Ala His Gln Ser Asn Thr Lys Thr			
	145	150	155
Gly Ser Glu Pro Pro Leu Ala Pro Pro Val Ser Glu Glu Glu Asp Glu			
	165	170	175
Glu Glu Glu Glu Glu Glu Asp Asp Asn Glu Pro Pro Pro Val Ile Ala			
	180	185	190
Pro Arg Pro Glu His Thr Lys Ser Ile Tyr Thr Arg Ser Val Val Glu			
	195	200	205
Ser Ile Ala Ser Pro Ala Ala Pro Asn Lys Glu Asp Ile Pro Pro Ser			
	210	215	220
Ala Glu Asn Ala Asn Ser Thr Thr Leu Tyr Arg Asn Thr Asp Arg Gln			
	225	230	235
Arg Lys Lys Ser Lys Met Thr Asp Glu Glu Ile Leu Glu Lys Leu Arg			
	245	250	255
Ser Ile Val Ser Val Gly Asp Pro Lys Lys Lys Tyr Thr Arg Leu Glu			
	260	265	270
Lys Ile Gly Gln Gly Ala Ser Gly Thr Val Tyr Thr Ala Leu Asp Ile			
	275	280	285
Ala Thr Gly Gln Glu Val Ala Ile Lys Gln Met Asn Leu Gln Gln Gln			
	290	295	300

Pro Lys Lys Glu Leu Ile Ile Asn Glu Ile Leu Val Met Arg Glu Asn
 305 310 315 320
 Lys Asn Pro Asn Ile Val Asn Tyr Leu Asp Ser Tyr Leu Val Gly Asp
 325 330 335
 Glu Leu Trp Val Val Met Glu Tyr Leu Ala Gly Gly Ser Leu Thr Asp
 340 345 350
 Val Val Thr Glu Thr Cys Met Asp Val Gly Gln Ile Ala Ala Val Cys
 355 360 365
 Arg Glu Cys Leu Gln Ala Leu Asp Phe Leu His Ser Asn Gln Val Ile
 370 375 380
 His Arg Asp Ile Lys Ser Asp Asn Ile Leu Leu Gly Met Asp Gly Ser
 385 390 395 400
 Val Lys Leu Thr Asp Phe Gly Phe Cys Ala Gln Ile Thr Pro Glu Gln
 405 410 415
 Ser Lys Arg Ser Thr Met Val Gly Thr Pro Tyr Trp Met Ala Pro Glu
 420 425 430
 Val Val Thr Arg Lys Ala Tyr Gly Pro Lys Val Asp Ile Trp Ser Leu
 435 440 445
 Gly Ile Met Ala Ile Glu Met Val Glu Gly Glu Pro Pro Tyr Leu Asn
 450 455 460
 Glu Asn Pro Leu Arg Ala Leu Tyr Leu Ile Ala Thr Asn Gly Thr Pro
 465 470 475 480
 Glu Leu Gln Asn Pro Glu Arg Leu Ser Ala Val Phe His Asp Phe Leu
 485 490 495
 Asn Arg Cys Leu Glu Met Asp Val Asp Arg Arg Gly Ser Ala Lys Glu
 500 505 510
 Leu Leu Gln His Pro Phe Leu Lys Leu Ala Lys Pro Leu Ser Ser Leu
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 Thr Pro Leu Ile Ile Ala Ala Lys Glu Ala Ile Lys Asn Ser Ser Arg

530

535

540

<210> 818

<211> 2504

<212> DNA

<213> *Mus musculus*

<220>

<221> CDS

<222> (358).. (2040)

<400> 818

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Thr Ala Glu Ser Pro Gln Glu Leu Ser Phe Arg Arg Gly Asp Val Leu
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cgg gta ctg cag agg gag ggt gct ggt gga ctt gat ggt tgg tgc ctc 501
Arg Val Leu Gln Arg Glu Gly Ala Gly Gly Leu Asp Gly Trp Cys Leu
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Cys Ser Leu His Gly Gln Gln Gly Ile Val Pro Ala Asn Arg Val Lys

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ccc acc cag cct ggc tca tca tgt ccc acc cca gag cgt ggc tgt gag	645		
Pro Thr Gln Pro Gly Ser Ser Cys Pro Thr Pro Glu Arg Gly Cys Glu			
85	90	95	
gag cag gag gtg tat gta ata cca cca cca gct cga ccc tgc tct gcc	693		
Glu Gln Glu Val Tyr Val Ile Pro Pro Pro Ala Arg Pro Cys Ser Ala			
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tcg gga ctt cca gct aga tcc tgc tca ccc tct tct gac tcc atc tac	741		
Ser Gly Leu Pro Ala Arg Ser Cys Ser Pro Ser Ser Asp Ser Ile Tyr			
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Lys Val Pro Arg Val Asn Gly Met Gln Leu Thr Ala Ser Arg Asp Val			
130	135	140	
gca gag gtc tat gat gtg cct ccc aac atc ctc cgg gct ccc tcc agc	837		
Ala Glu Val Tyr Asp Val Pro Pro Asn Ile Leu Arg Ala Pro Ser Ser			
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tgt ccc tat gac tcc cca gcc tcc ttt tcc tgt cct gtg gcc cca gtt	885		
Cys Pro Tyr Asp Ser Pro Ala Ser Phe Ser Cys Pro Val Ala Pro Val			
165	170	175	
gtc cca cag ccc ccc aga gag gat gaa gcg ccc tac gat gtg cct ctg	933		
Val Pro Gln Pro Pro Arg Glu Asp Glu Ala Pro Tyr Asp Val Pro Leu			
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 Gly Asp Pro Glu Cys Arg Glu Val Ala Asn Asp Pro Ala Gly Pro His
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<211> 560

<212> PRT

<213> Mus musculus

<400> 819

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Cys Ser Leu His Gly Gln Gln Gly Ile Val Pro Ala Asn Arg Val Lys
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 Ala Glu Val Tyr Asp Val Pro Pro Asn Ile Leu Arg Ala Pro Ser Ser
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 Cys Pro Tyr Asp Ser Pro Ala Ser Phe Ser Cys Pro Val Ala Pro Val
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 Val Pro Gln Pro Pro Arg Glu Asp Glu Ala Pro Tyr Asp Val Pro Leu
 180 185 190
 Ala Leu Lys Pro Pro Ala Glu Leu Glu Arg Asp Pro Glu Trp Glu Gly
 195 200 205
 Gly Arg Glu Pro Gly Pro Pro Leu Tyr Ala Ala Pro Ser Asn Leu Lys
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 225 230 235 240
 Ala Asn Gly Glu Ser Arg Asp Ala Asp Glu Gly Ile Tyr Asp Val Pro
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 Ser Thr Asp Leu Asp Thr Val Ala Gln Leu Pro Thr Arg Ser Ser Pro

275	280	285
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Pro Ser Pro Ala Pro Gly Arg Lys Gly Ser Ile Gln Asp Arg Pro Leu		
325	330	335
Pro Pro Pro Pro Pro Cys Leu Pro Gly Tyr Gly Gly Leu Lys Pro Glu		
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Gly Asp Pro Glu Cys Arg Glu Val Ala Asn Asp Pro Ala Gly Pro His		
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Asn Glu Tyr Glu Gly Ile Pro Met Ala Glu Glu Tyr Asp Tyr Val His		
370	375	380
Leu Lys Gly Val Asp Thr Ala Gln Gly Ser Arg Pro Leu Asp Lys Ala		
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Phe Pro Val Asp Pro Glu Leu Leu Glu Arg Gly Leu Ala Glu Arg Lys		
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Glu Ala Leu Ser Pro Glu Glu Pro Leu Val Leu Ser Thr Gly Asp Leu		
420	425	430
Gln Leu Leu His Phe Tyr Ala Gly Gln Cys Gln Ser His Tyr Ser Ala		
435	440	445
Leu Gln Ala Ala Val Ala Ala Leu Val Ala Ser Thr Gln Ala Asn Gln		
450	455	460
Pro Pro Cys Leu Phe Val Pro His Gly Lys Arg Val Val Val Ala Ala		
465	470	475
His Arg Leu Val Phe Val Gly Asp Thr Leu Gly Arg Leu Ala Ala Ser		
485	490	495
Ala Ala Leu Arg Ala Gln Val Gly Ala Ala Gly Thr Met Leu Ala Gln		
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Thr Leu Arg Ala Thr Val Leu Ala Val Lys Gly Ala Ala Leu Gly Tyr
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<211> 2348

<212> DNA

<213> Mus musculus

<220>

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<400> 820

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 aggagagct atg gag gag cag ggt att cag tgc gcc ccg ccg cct ccc gcc 591

Met Glu Glu Gln Gly Ile Gln Cys Ala Pro Pro Pro Pro Ala

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gcc gac ggc tac att tac cag gac tcc atc gcc ctg ccc tgg aaa gtc 687
Ala Asp Gly Tyr Ile Tyr Gln Asp Ser Ile Ala Leu Pro Trp Lys Val
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ctg ctg gtt gct ttg ttg gcg ctc atc acc ttg gcc acc acg ctc tcc 735
Leu Leu Val Ala Leu Leu Ala Leu Ile Thr Leu Ala Thr Thr Leu Ser
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aac gcc ttt gta atc gct acg gtg tat cgg acc cgg aag cta cac acc 783
Asn Ala Phe Val Ile Ala Thr Val Tyr Arg Thr Arg Lys Leu His Thr
                65                70                75
ccg gct aac tac ctg atc gcc tct ctg gca gtc act gac ctg ctc gtg 831
Pro Ala Asn Tyr Leu Ile Ala Ser Leu Ala Val Thr Asp Leu Leu Val
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Trp Thr Leu Gly Gln Val Val Cys Asp Phe Trp Leu Ser Ser Asp Ile
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Thr Cys Cys Thr Ala Ser Ile Met His Leu Cys Val Ile Ala Leu Asp
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cgc tac tgg gcc atc acc gat gcg gtg gag tat tct gct aaa agg act 1023
Arg Tyr Trp Ala Ile Thr Asp Ala Val Glu Tyr Ser Ala Lys Arg Thr
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gag atg ctg gac tgc ttt gtg aac acc gac cac gtc ctc tac acg gtc	1167		
Glu Met Leu Asp Cys Phe Val Asn Thr Asp His Val Leu Tyr Thr Val			
195	200	205	
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Tyr Ser Thr Val Gly Ala Phe Tyr Leu Pro Thr Leu Leu Leu Ile Ala			
210	215	220	
ctc tat ggc cgc atc tat gtg gaa gcc cgc tct cgg att ttg aaa cag	1263		
Leu Tyr Gly Arg Ile Tyr Val Glu Ala Arg Ser Arg Ile Leu Lys Gln			
225	230	235	
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Thr Pro Asn Lys Thr Gly Lys Arg Leu Thr Arg Ala Gln Leu Ile Thr			
240	245	250	
gac tcc ccg gga tcc aca tcc tct gtc acc tcc att aac tcc cgg gct	1359		
Asp Ser Pro Gly Ser Thr Ser Ser Val Thr Ser Ile Asn Ser Arg Ala			
255	260	265	270
ccg gac gtg ccc agt gag tcc ggg tct cct gtg tac gtg aac caa gtc	1407		
Pro Asp Val Pro Ser Glu Ser Gly Ser Pro Val Tyr Val Asn Gln Val			
275	280	285	
aaa gtg cga gtc tca gac gcc ctg ctg gaa aag aag aaa ctc atg gcc	1455		
Lys Val Arg Val Ser Asp Ala Leu Leu Glu Lys Lys Lys Leu Met Ala			
290	295	300	
gct agg gag cgc aaa gcc acc aag acc cta ggg atc att tta gga gca	1503		
Ala Arg Glu Arg Lys Ala Thr Lys Thr Leu Gly Ile Ile Leu Gly Ala			
305	310	315	
ttt att gtg tgt tgg ctg ccc ttc ttc atc atc tcc ctg gtg atg cct	1551		

Phe Ile Val Cys Trp Leu Pro Phe Phe Ile Ile Ser Leu Val Met Pro
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 Ile Cys Lys Asp Ala Cys Trp Phe His Met Ala Ile Phe Asp Phe Phe
 335 340 345 350
 aat tgg tta ggc tat ctt aac tcc ctc atc aac ccc atc atc tac acc 1647
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 Lys Cys Ala Gly

385

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<211> 386

<212> PRT

<213> Mus musculus

<400> 821

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 Ser Leu Pro Pro Phe Phe Trp Arg Gln Ala Lys Ala Glu Glu Glu Met
 180 185 190
 Leu Asp Cys Phe Val Asn Thr Asp His Val Leu Tyr Thr Val Tyr Ser
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Asn Lys Thr Gly Lys Arg Leu Thr Arg Ala Gln Leu Ile Thr Asp Ser			
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Pro Gly Ser Thr Ser Ser Val Thr Ser Ile Asn Ser Arg Ala Pro Asp			
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Val Pro Ser Glu Ser Gly Ser Pro Val Tyr Val Asn Gln Val Lys Val			
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Arg Val Ser Asp Ala Leu Leu Glu Lys Lys Lys Leu Met Ala Ala Arg			
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Glu Arg Lys Ala Thr Lys Thr Leu Gly Ile Ile Leu Gly Ala Phe Ile			
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Val Cys Trp Leu Pro Phe Phe Ile Ile Ser Leu Val Met Pro Ile Cys			
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Lys Asp Ala Cys Trp Phe His Met Ala Ile Phe Asp Phe Phe Asn Trp			
	340	345	350
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<211> 7608

<212> DNA

<213> Mus musculus

<400> 822

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 taacagtaga ttctagctac agatagctga ctctgggaca cctacaagaa ttgttgtaat 180
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Met Asp Ile Glu Ala Tyr

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Phe Glu Arg Ile Gly Tyr Lys Asn Ser Val Asn Lys Leu Asp Leu Ala
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    aca tta act gaa gtt ctt cag cac cag atg cga gca gtt cct ttt gag      330
Thr Leu Thr Glu Val Leu Gln His Gln Met Arg Ala Val Pro Phe Glu
          25                      30                      35
    aat ctt aac atg cat tgt gga gaa gcc atg cat ctg gat tta cag gac      378
Asn Leu Asn Met His Cys Gly Glu Ala Met His Leu Asp Leu Gln Asp
          40                      45                      50
    att ttt gac cac ata gta agg aag aag aga ggt gga tgg tgt ctc cag      426
Ile Phe Asp His Ile Val Arg Lys Lys Arg Gly Gly Trp Cys Leu Gln
    55                      60                      65                      70
    gtt aat cat ctg ctg tac tgg gct ctg acc aaa atg ggc ttt gaa acc      474
Val Asn His Leu Leu Tyr Trp Ala Leu Thr Lys Met Gly Phe Glu Thr
          75                      80                      85
    aca atg ttg gga gga tat gtt tac ata act cca gtc agc aaa tat agc      522
Thr Met Leu Gly Gly Tyr Val Tyr Ile Thr Pro Val Ser Lys Tyr Ser
          90                      95                      100
    agt gaa atg gtc cac ctt cta gta cag gtg acc atc agt gac agg aag      570
Ser Glu Met Val His Leu Leu Val Gln Val Thr Ile Ser Asp Arg Lys
          105                      110                      115
    tac att gtg gat tcc gcc tat gga ggc tcc tac cag atg tgg gag cct      618
Tyr Ile Val Asp Ser Ala Tyr Gly Gly Ser Tyr Gln Met Trp Glu Pro
          120                      125                      130
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    135                      140                      145                      150
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Lys Asn Lys Tyr Arg Lys Ile Tyr Ser Phe Thr Leu Glu Pro Arg Val			
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atc gag gat ttt gaa tat gtg aat agc tat ctt cag aca tcg cca gca			858
Ile Glu Asp Phe Glu Tyr Val Asn Ser Tyr Leu Gln Thr Ser Pro Ala			
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Ser Val Phe Val Ser Thr Ser Phe Cys Ser Leu Gln Thr Ser Glu Gly			
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Val His Cys Leu Val Gly Ser Thr Phe Thr Ser Arg Arg Phe Ser Tyr			
235	240	245	
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Lys Asp Asp Val Asp Leu Val Glu Phe Lys Tyr Val Asn Glu Glu Glu			
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Ile Glu Asp Val Leu Lys Thr Ala Phe Gly Ile Ser Leu Glu Arg Lys			
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Phe Val Pro Lys His Gly Glu Leu Val Phe Thr Ile			
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1347

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<211> 290

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<213> Mus musculus

<400> 824

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Arg Ala Val Pro Phe Glu Asn Leu Asn Met His Cys Gly Glu Ala Met
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His Leu Asp Leu Gln Asp Ile Phe Asp His Ile Val Arg Lys Lys Arg
      50             55             60
Gly Gly Trp Cys Leu Gln Val Asn His Leu Leu Tyr Trp Ala Leu Thr
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Lys Met Gly Phe Glu Thr Thr Met Leu Gly Gly Tyr Val Tyr Ile Thr
      85             90             95
Pro Val Ser Lys Tyr Ser Ser Glu Met Val His Leu Leu Val Gln Val
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Thr Ile Ser Asp Arg Lys Tyr Ile Val Asp Ser Ala Tyr Gly Gly Ser
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Tyr Gln Met Trp Glu Pro Leu Glu Leu Thr Ser Gly Lys Asp Gln Pro
      130            135            140
Gln Val Pro Ala Ile Phe Leu Leu Thr Glu Glu Asn Gly Thr Trp Tyr
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Leu Asp Gln Ile Arg Arg Glu Gln Tyr Val Pro Asn Glu Glu Phe Val

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Leu Gln Thr Ser Pro Ala Ser Val Phe Val Ser Thr Ser Phe Cys Ser					
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Leu Gln Thr Ser Glu Gly Val His Cys Leu Val Gly Ser Thr Phe Thr					
225		230		235	240
Ser Arg Arg Phe Ser Tyr Lys Asp Asp Val Asp Leu Val Glu Phe Lys					
	245		250		255
Tyr Val Asn Glu Glu Glu Ile Glu Asp Val Leu Lys Thr Ala Phe Gly					
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 Ser Phe His Gly His His Glu Lys Gly Lys Glu Gly Gln Val Leu Gln

35

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cgc tcc aag aga ggc tgg gtc tgg aac cag ttc ttt gtg ata gaa gag 610
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65

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 Tyr Thr Gly Pro Asp Pro Val Leu Val Gly Arg Leu His Ser Asp Ile

70

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 Asp Ser Gly Asp Gly Asn Ile Lys Tyr Ile Leu Ser Gly Glu Gly Ala

85

90

95

gga acc att ttt gtg att gat gac aaa tca ggg aac att cat gcc acc 754
 Gly Thr Ile Phe Val Ile Asp Asp Lys Ser Gly Asn Ile His Ala Thr

100

105

110

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Val Lys Ala Lys Asp Pro Asp Ile Gly Glu Asn Gly Leu Val Thr Tyr			
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575	

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Gly Cys Asp Val Asn Gly Ala Leu Leu Ser Cys Asn Ala Glu Ala Tyr
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Ile Leu Asn Ala Gly Leu Ser Thr Gly Ala Leu Ile Ala Ile Leu Ala
610                      615                      620                      625

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Cys Ile Val Ile Leu Leu Val Ile Val Val Leu Phe Val Thr Leu Arg
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agg caa aag aaa gaa cca ctc att gta ttt gaa gag gag gat gtc cgt      2386
Arg Gln Lys Lys Glu Pro Leu Ile Val Phe Glu Glu Glu Asp Val Arg
      645                      650                      655

gag aac atc ata acc tat gat gat gaa ggg ggt ggt gag gaa gac act      2434
Glu Asn Ile Ile Thr Tyr Asp Asp Glu Gly Gly Gly Glu Glu Asp Thr
      660                      665                      670

gaa gcc ttc gac ata gcc acc ctg cag aat cct gac ggc atc aat gga      2482
Glu Ala Phe Asp Ile Ala Thr Leu Gln Asn Pro Asp Gly Ile Asn Gly
      675                      680                      685

ttt atc cct cgc aaa gat atc aaa cct gag tat cag tat atg cct aga      2530
Phe Ile Pro Arg Lys Asp Ile Lys Pro Glu Tyr Gln Tyr Met Pro Arg
690                      695                      700                      705

cct ggg ctg cga cca gca ccc aac agt gtg gat gtg gac gac ttc atc      2578
Pro Gly Leu Arg Pro Ala Pro Asn Ser Val Asp Val Asp Asp Phe Ile
      710                      715                      720

aac aca aga ata cag gag gca gat aat gat ccc aca gcc cct ccc tat      2626
Asn Thr Arg Ile Gln Glu Ala Asp Asn Asp Pro Thr Ala Pro Pro Tyr

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725	730	735	
gac tcc atc caa atc tat ggt tat gag ggc cgg ggt tcc atg gct ggg			2674
Asp Ser Ile Gln Ile Tyr Gly Tyr Glu Gly Arg Gly Ser Met Ala Gly			
740	745	750	
tcc ctg agc tcc ttg gag tct gcc acg aca gac tca gac ctg gac tac			2722
Ser Leu Ser Ser Leu Glu Ser Ala Thr Thr Asp Ser Asp Leu Asp Tyr			
755	760	765	
gac tat cta cag aac tgg gga cct cgt ttt aag aaa ctg gca gac ttg			2770
Asp Tyr Leu Gln Asn Trp Gly Pro Arg Phe Lys Lys Leu Ala Asp Leu			
770	775	780	785
tat ggc tcc aaa gac act ttt gat gat gac tct taa caataatggt			2816
Tyr Gly Ser Lys Asp Thr Phe Asp Asp Asp Ser			
790	795		
acaaatttgg ccttaagaac tgtgtctggc attctcaaga atctagaaga tgtgtaaaca			2876
ggatattttt taaatcaagg aaaggctcat ttaaaacaag cagagtttta cagagaggaa			2936
acatttaata aaactgcaag gacatcaaag tggaaaatac tgtgaagtac cttttccac			2996
ttaaaaagca aatattgaag ttgtttatca acttcagtag aaaaaaaaa accacttggc			3056
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atgtatgtac aatacaatgt acaattatgt ctcttgagca tcaatcttgt tactgctgat			3356
tcttgtaaat ctttttgctt ctactttcat cctaaactaa tacgtgccag atataactgt			3416
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accctattta tgatctgttg tagtctgctg ctctcattgt ttatttaaata caaatatgtt			3776

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 gccttgagca tigtggagtt gaaggggtgc agagtcaaag ccaactctgg ttttccttat 4076
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<210> 826

<211> 796

<212> PRT

<213> Mus musculus

<400> 826

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			20					25					30		
Pro	Ser	Phe	His	Gly	His	His	Glu	Lys	Gly	Lys	Glu	Gly	Gln	Val	Leu
		35					40					45			
Gln	Arg	Ser	Lys	Arg	Gly	Trp	Val	Trp	Asn	Gln	Phe	Phe	Val	Ile	Glu
	50					55				60					
Glu	Tyr	Thr	Gly	Pro	Asp	Pro	Val	Leu	Val	Gly	Arg	Leu	His	Ser	Asp
65				70						75				80	
Ile	Asp	Ser	Gly	Asp	Gly	Asn	Ile	Lys	Tyr	Ile	Leu	Ser	Gly	Glu	Gly
			85					90					95		
Ala	Gly	Thr	Ile	Phe	Val	Ile	Asp	Asp	Lys	Ser	Gly	Asn	Ile	His	Ala
		100						105					110		
Thr	Lys	Thr	Leu	Asp	Arg	Glu	Glu	Arg	Ala	Gln	Tyr	Thr	Leu	Met	Ala
		115						120					125		

Gln Ala Val Asp Arg Asp Thr Asn Arg Pro Leu Glu Pro Pro Ser Glu
 130 135 140
 Phe Ile Val Lys Val Gln Asp Ile Asn Asp Asn Pro Pro Glu Phe Leu
 145 150 155 160
 His Glu Ile Tyr His Ala Asn Val Pro Glu Arg Ser Asn Val Gly Thr
 165 170 175
 Ser Val Ile Gln Val Thr Ala Ser Asp Ala Asp Asp Pro Thr Tyr Gly
 180 185 190
 Asn Ser Ala Lys Leu Val Tyr Ser Ile Leu Glu Gly Gln Pro Tyr Phe
 195 200 205
 Ser Val Glu Ala Gln Thr Gly Ile Ile Arg Thr Ala Leu Pro Asn Met
 210 215 220
 Asp Arg Glu Ala Lys Glu Glu Tyr His Val Val Ile Gln Ala Lys Asp
 225 230 235 240
 Met Gly Gly His Met Gly Gly Leu Ser Gly Thr Thr Lys Val Thr Ile
 245 250 255
 Thr Leu Thr Asp Val Asn Asp Asn Pro Pro Lys Phe Pro Gln Ser Val
 260 265 270
 Tyr Gln Met Ser Val Ser Glu Ala Ala Val Pro Gly Glu Glu Val Gly
 275 280 285
 Arg Val Lys Ala Lys Asp Pro Asp Ile Gly Glu Asn Gly Leu Val Thr
 290 295 300
 Tyr Asn Ile Val Asp Gly Asp Gly Ile Glu Leu Phe Glu Ile Thr Thr
 305 310 315 320
 Asp Tyr Glu Thr Gln Asp Gly Val Val Lys Leu Lys Lys Pro Val Asp
 325 330 335
 Phe Glu Thr Lys Arg Ala Tyr Ser Leu Lys Ile Glu Ala Ala Asn Val
 340 345 350
 His Ile Asp Pro Lys Phe Ile Ser Asn Gly Pro Phe Lys Asp Thr Val

355	360	365
Thr Val Lys Ile Ser Val Glu Asp Ala Asp Glu Pro Pro Met Phe Leu		
370	375	380
Ala Pro Ser Tyr Ile His Glu Val Gln Glu Asn Ala Ala Ala Gly Thr		
385	390	395
Val Val Gly Arg Val His Ala Lys Asp Pro Asp Ala Ala Asn Ser Pro		
405	410	415
Ile Arg Tyr Ser Ile Asp Arg His Thr Asp Leu Asp Arg Phe Phe Thr		
420	425	430
Ile Asn Pro Glu Asp Gly Phe Ile Lys Thr Thr Lys Pro Leu Asp Arg		
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Glu Glu Thr Ala Trp Leu Asn Ile Ser Val Phe Ala Ala Asp Ile His		
450	455	460
Asn Arg His Gln Glu Thr Lys Val Pro Val Ala Ile Arg Val Leu Asp		
465	470	475
Val Asn Asp Asn Ala Pro Lys Phe Ala Ala Pro Tyr Glu Gly Phe Ile		
485	490	495
Cys Glu Ser Asp His Pro Lys Ala Leu Ser Asn Gln Pro Ile Val Thr		
500	505	510
Val Ser Ala Asp Asp Gln Asp Asp Thr Ala Asn Gly Pro Arg Phe Ile		
515	520	525
Phe Ser Leu Pro Pro Glu Ile Met His Asn Pro Asn Phe Thr Val Arg		
530	535	540
Asp Asn Arg Asp Asn Thr Ala Gly Val Tyr Ala Arg Arg Gly Gly Phe		
545	550	555
Ser Arg Gln Lys Gln Asp Phe Tyr Leu Leu Pro Ile Val Ile Ser Asp		
565	570	575
Gly Gly Ile Pro Pro Met Ser Ser Thr Asn Thr Leu Thr Ile Lys Val		
580	585	590

Cys Gly Cys Asp Val Asn Gly Ala Leu Leu Ser Cys Asn Ala Glu Ala
 595 600 605
 Tyr Ile Leu Asn Ala Gly Leu Ser Thr Gly Ala Leu Ile Ala Ile Leu
 610 615 620
 Ala Cys Ile Val Ile Leu Leu Val Ile Val Val Leu Phe Val Thr Leu
 625 630 635 640
 Arg Arg Gln Lys Lys Glu Pro Leu Ile Val Phe Glu Glu Glu Asp Val
 645 650 655
 Arg Glu Asn Ile Ile Thr Tyr Asp Asp Glu Gly Gly Gly Glu Glu Asp
 660 665 670
 Thr Glu Ala Phe Asp Ile Ala Thr Leu Gln Asn Pro Asp Gly Ile Asn
 675 680 685
 Gly Phe Ile Pro Arg Lys Asp Ile Lys Pro Glu Tyr Gln Tyr Met Pro
 690 695 700
 Arg Pro Gly Leu Arg Pro Ala Pro Asn Ser Val Asp Val Asp Asp Phe
 705 710 715 720
 Ile Asn Thr Arg Ile Gln Glu Ala Asp Asn Asp Pro Thr Ala Pro Pro
 725 730 735
 Tyr Asp Ser Ile Gln Ile Tyr Gly Tyr Glu Gly Arg Gly Ser Met Ala
 740 745 750
 Gly Ser Leu Ser Ser Leu Glu Ser Ala Thr Thr Asp Ser Asp Leu Asp
 755 760 765
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 770 775 780
 Leu Tyr Gly Ser Lys Asp Thr Phe Asp Asp Asp Ser
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<210> 827

<211> 1657

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (103).. (903)

<400> 827

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                                     Met Gly Ala Gly
                                     1
tgt gtc aaa gtc acc aag tat ttc ctc ttc ctc ttc aac ttg ctg ttc 162
Cys Val Lys Val Thr Lys Tyr Phe Leu Phe Leu Phe Asn Leu Leu Phe
  5          10          15          20
ttt atc ctg ggt gct gtc atc ctg ggc ttc ggg gtg tgg att ctt gca 210
Phe Ile Leu Gly Ala Val Ile Leu Gly Phe Gly Val Trp Ile Leu Ala
          25          30          35
gac aag aac agc ttc att tcc gtc cta caa acc tca tcc agc tcg ctg 258
Asp Lys Asn Ser Phe Ile Ser Val Leu Gln Thr Ser Ser Ser Ser Leu
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cag gtg ggg gct tac gtc ttc atc ggt gtg ggc gcc atc acc ata gtg 306
Gln Val Gly Ala Tyr Val Phe Ile Gly Val Gly Ala Ile Thr Ile Val
          55          60          65
atg ggc ttc ctg ggc tgt atc ggt gct gtc aat gag gtc cgc tgc ttg 354
Met Gly Phe Leu Gly Cys Ile Gly Ala Val Asn Glu Val Arg Cys Leu
          70          75          80
ctg ggt ctg tac ttt gtc ttc ctt ctg ctg atc ctc atc gca cag gtg 402
Leu Gly Leu Tyr Phe Val Phe Leu Leu Leu Ile Leu Ile Ala Gln Val

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85	90	95	100	
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Thr Val Gly Val Leu Phe Tyr Phe Asn Ala Asp Lys Leu Lys Lys Glu				
105	110	115		
atg ggg aac aca gtg atg gac atc att cgc aac tac act gcc aat gcc	498			
Met Gly Asn Thr Val Met Asp Ile Ile Arg Asn Tyr Thr Ala Asn Ala				
120	125	130		
acc agt agc cgc gag gag gcc tgg gac tac gtg cag gcg cag gtc aag	546			
Thr Ser Ser Arg Glu Glu Ala Trp Asp Tyr Val Gln Ala Gln Val Lys				
135	140	145		
tgc tgt ggc tgg gtc agc cac tac aac tgg aca gag aac gag gag ctc	594			
Cys Cys Gly Trp Val Ser His Tyr Asn Trp Thr Glu Asn Glu Glu Leu				
150	155	160		
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Met Gly Phe Thr Lys Thr Thr Tyr Pro Cys Ser Cys Glu Lys Ile Lys				
165	170	175	180	
gaa gag gac aac cag ctc att gtg aag aaa gga ttc tgt gag gct gat	690			
Glu Glu Asp Asn Gln Leu Ile Val Lys Lys Gly Phe Cys Glu Ala Asp				
185	190	195		
aac agc act gtg agc gaa aac aac cct gag gat tgg cct gtg aac act	738			
Asn Ser Thr Val Ser Glu Asn Asn Pro Glu Asp Trp Pro Val Asn Thr				
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gag ggc tgc atg gag aag gcg cag gcg tgg ctt cag gag aac ttc ggc	786			
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215	220	225		
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Ile Leu Leu Gly Val Cys Ala Gly Val Ala Val Ile Glu Leu Leu Gly				
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Leu Phe Leu Ser Ile Cys Leu Cys Arg Tyr Ile His Ser Glu Asp Tyr
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 agc aag gtc ccc aag tac tga gggtgctgat gtccccaccg tcctatttct 933
 Ser Lys Val Pro Lys Tyr
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<210> 828

<211> 266

<212> PRT

<213> Mus musculus

<400> 828

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20

25

30

Trp Ile Leu Ala Asp Lys Asn Ser Phe Ile Ser Val Leu Gln Thr Ser
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 Ser Ser Ser Leu Gln Val Gly Ala Tyr Val Phe Ile Gly Val Gly Ala
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 65 70 75 80
 Val Arg Cys Leu Leu Gly Leu Tyr Phe Val Phe Leu Leu Leu Ile Leu
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 100 105 110
 Leu Lys Lys Glu Met Gly Asn Thr Val Met Asp Ile Ile Arg Asn Tyr
 115 120 125
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 Ala Gln Val Lys Cys Cys Gly Trp Val Ser His Tyr Asn Trp Thr Glu
 145 150 155 160
 Asn Glu Glu Leu Met Gly Phe Thr Lys Thr Thr Tyr Pro Cys Ser Cys
 165 170 175
 Glu Lys Ile Lys Glu Glu Asp Asn Gln Leu Ile Val Lys Lys Gly Phe
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 Cys Glu Ala Asp Asn Ser Thr Val Ser Glu Asn Asn Pro Glu Asp Trp
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 Pro Val Asn Thr Glu Gly Cys Met Glu Lys Ala Gln Ala Trp Leu Gln
 210 215 220
 Glu Asn Phe Gly Ile Leu Leu Gly Val Cys Ala Gly Val Ala Val Ile
 225 230 235 240
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 Ser Glu Asp Tyr Ser Lys Val Pro Lys Tyr

260

265

<210> 829

<211> 1513

<212> DNA

<213> Mus musculus

<400> 829

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cgcatgcacg ggctgaacgc ggcgctggac aacctgcgca aggtgggtacc ttgctactcc 180
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<210> 830

<211> 220

<212> DNA

<213> Mus musculus

<400> 830

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agaggtgcaa gcccggtca ccatcaggag tgccgagcac accaacgatg tggagttccc 120
gaacttcaat atcagctacc gacgctacgc ttgcctctac ttctgcatct gcgtggatgt 180
caacgacaaa aaactagccg atctctaagg catccacaac 220

<210> 831

<211> 1765

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (112).. (1443)

<400> 831

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Met Gln

1

cgc cgg gac gat cct gcc tcg cgc ctc acc cgg tcc tcg ggg cgc agc 165
 Arg Arg Asp Asp Pro Ala Ser Arg Leu Thr Arg Ser Ser Gly Arg Ser
 5 10 15
 tgc tcc aag gac ccg tca ggt gcc cac ccc tcg gtg cgt ctg acc ccg 213
 Cys Ser Lys Asp Pro Ser Gly Ala His Pro Ser Val Arg Leu Thr Pro
 20 25 30
 tct cgg ccg tcg ccg ctt cct cac cgg ccc cgg gga ggg gga ggt ggg 261
 Ser Arg Pro Ser Pro Leu Pro His Arg Pro Arg Gly Gly Gly Gly Gly
 35 40 45 50
 ccc aga gga ggc gct cgg gcc tcg ccc gcc acg cag ccg ccg ccg ctg 309
 Pro Arg Gly Gly Ala Arg Ala Ser Pro Ala Thr Gln Pro Pro Pro Leu
 55 60 65
 ctg cct ccc tcc acc ccg ggt ccc gac gcg acg gtg gtg ggt tcc gcg 357
 Leu Pro Pro Ser Thr Pro Gly Pro Asp Ala Thr Val Val Gly Ser Ala
 70 75 80
 ccg acc ccg ctg ctg ccc ccg tca gcc aca gcc gcg gtc aag atg gag 405
 Pro Thr Pro Leu Leu Pro Pro Ser Ala Thr Ala Ala Val Lys Met Glu
 85 90 95
 ccg gag aat aag tac ctg cct gaa ctc atg gcc gag aag gac tcg ctc 453
 Pro Glu Asn Lys Tyr Leu Pro Glu Leu Met Ala Glu Lys Asp Ser Leu
 100 105 110
 gac ccg tcc ttc act cac gcc atg cag ctg ctg tcc gta gaa att gag 501
 Asp Pro Ser Phe Thr His Ala Met Gln Leu Leu Ser Val Glu Ile Glu
 115 120 125 130
 aag att cag aag gga gag tca aaa aaa gat gac gag gag aat tat ttg 549
 Lys Ile Gln Lys Gly Glu Ser Lys Lys Asp Asp Glu Glu Asn Tyr Leu
 135 140 145

gat tta ttt tct cat aag aac atg aag ctg aaa gaa cgc gtg ctg ata 597
Asp Leu Phe Ser His Lys Asn Met Lys Leu Lys Glu Arg Val Leu Ile
150 155 160
cct gtc aag cag tat cca aag ttc aat ttt gtg cgg aag att ctt gga 645
Pro Val Lys Gln Tyr Pro Lys Phe Asn Phe Val Arg Lys Ile Leu Gly
165 170 175
cca caa gga aat aca atc aaa aga ctc cag gaa gag act ggt gca aag 693
Pro Gln Gly Asn Thr Ile Lys Arg Leu Gln Glu Glu Thr Gly Ala Lys
180 185 190
atc tct gtc ttg ggg aag ggt tca atg aga gac aaa gcc aag gag gaa 741
Ile Ser Val Leu Gly Lys Gly Ser Met Arg Asp Lys Ala Lys Glu Glu
195 200 205 210
gag ttg cgc aag ggt gga gac ccc aaa tat gcc cat tta aat atg gat 789
Glu Leu Arg Lys Gly Gly Asp Pro Lys Tyr Ala His Leu Asn Met Asp
215 220 225
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Leu His Val Phe Ile Glu Val Phe Gly Pro Pro Cys Glu Ala Tyr Ala
230 235 240
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Leu Met Ala His Ala Met Glu Glu Val Lys Lys Phe Leu Val Pro Asp
245 250 255
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Met Met Asp Asp Ile Cys Gln Glu Gln Phe Leu Glu Leu Ser Tyr Leu
260 265 270
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Asn Gly Val Pro Glu Pro Ser Arg Gly Arg Gly Val Ser Val Arg Gly
275 280 285 290
cga gga gct gcc cct cct cct cca cct gtt ccc aga gga cgt ggt gtt 1029
Arg Gly Ala Ala Pro Pro Pro Pro Pro Val Pro Arg Gly Arg Gly Val

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Ile Thr Arg Gly Ser Thr Val Thr Arg Gly Val Pro Pro Pro Pro Thr			
325	330	335	
gtg agg ggt gct cca aca cca aga gct cgg aca gct ggg att cag aga	1173		
Val Arg Gly Ala Pro Thr Pro Arg Ala Arg Thr Ala Gly Ile Gln Arg			
340	345	350	
ata cct ttg cct ccc aca cct gca cca gaa aca tac gaa gat tat gga	1221		
Ile Pro Leu Pro Pro Thr Pro Ala Pro Glu Thr Tyr Glu Asp Tyr Gly			
355	360	365	370
tat gat gat aca tac gca gaa cag agt tac gaa ggc tat gaa ggc tat	1269		
Tyr Asp Asp Thr Tyr Ala Glu Gln Ser Tyr Glu Gly Tyr Glu Gly Tyr			
375	380	385	
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Tyr Ser Gln Ser Gln Gly Glu Ser Glu Tyr Tyr Asp Tyr Gly His Gly			
390	395	400	
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Tyr Arg Glu His Pro Tyr Gly Arg Tyr			
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<210> 832

<211> 443

<212> PRT

<213> Mus musculus

<400> 832

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 Thr Pro Ser Arg Pro Ser Pro Leu Pro His Arg Pro Arg Gly Gly Gly
 35 40 45
 Gly Gly Pro Arg Gly Gly Ala Arg Ala Ser Pro Ala Thr Gln Pro Pro
 50 55 60
 Pro Leu Leu Pro Pro Ser Thr Pro Gly Pro Asp Ala Thr Val Val Gly
 65 70 75 80
 Ser Ala Pro Thr Pro Leu Leu Pro Pro Ser Ala Thr Ala Ala Val Lys
 85 90 95
 Met Glu Pro Glu Asn Lys Tyr Leu Pro Glu Leu Met Ala Glu Lys Asp
 100 105 110
 Ser Leu Asp Pro Ser Phe Thr His Ala Met Gln Leu Leu Ser Val Glu
 115 120 125
 Ile Glu Lys Ile Gln Lys Gly Glu Ser Lys Lys Asp Asp Glu Glu Asn

130	135	140	
Tyr Leu Asp Leu Phe Ser His Lys Asn Met Lys Leu Lys Glu Arg Val			
145	150	155	160
Leu Ile Pro Val Lys Gln Tyr Pro Lys Phe Asn Phe Val Arg Lys Ile			
165	170	175	
Leu Gly Pro Gln Gly Asn Thr Ile Lys Arg Leu Gln Glu Glu Thr Gly			
180	185	190	
Ala Lys Ile Ser Val Leu Gly Lys Gly Ser Met Arg Asp Lys Ala Lys			
195	200	205	
Glu Glu Glu Leu Arg Lys Gly Gly Asp Pro Lys Tyr Ala His Leu Asn			
210	215	220	
Met Asp Leu His Val Phe Ile Glu Val Phe Gly Pro Pro Cys Glu Ala			
225	230	235	240
Tyr Ala Leu Met Ala His Ala Met Glu Glu Val Lys Lys Phe Leu Val			
245	250	255	
Pro Asp Met Met Asp Asp Ile Cys Gln Glu Gln Phe Leu Glu Leu Ser			
260	265	270	
Tyr Leu Asn Gly Val Pro Glu Pro Ser Arg Gly Arg Gly Val Ser Val			
275	280	285	
Arg Gly Arg Gly Ala Ala Pro Pro Pro Pro Pro Val Pro Arg Gly Arg			
290	295	300	
Gly Val Gly Pro Pro Arg Gly Ala Leu Val Arg Gly Thr Pro Val Arg			
305	310	315	320
Gly Ser Ile Thr Arg Gly Ser Thr Val Thr Arg Gly Val Pro Pro Pro			
325	330	335	
Pro Thr Val Arg Gly Ala Pro Thr Pro Arg Ala Arg Thr Ala Gly Ile			
340	345	350	
Gln Arg Ile Pro Leu Pro Pro Thr Pro Ala Pro Glu Thr Tyr Glu Asp			
355	360	365	

Tyr Gly Tyr Asp Asp Thr Tyr Ala Glu Gln Ser Tyr Glu Gly Tyr Glu
 370 375 380
 Gly Tyr Tyr Ser Gln Ser Gln Gly Glu Ser Glu Tyr Tyr Asp Tyr Gly
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 His Gly Glu Leu Gln Asp Ser Tyr Glu Ala Tyr Gly Gln Asp Asp Trp
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<210> 833

<211> 3292

<212> DNA

<213> *Mus musculus*

<220>

<221> CDS

<222> (424).. (1719)

<400> 833

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 taatagcaga aacatttaca cagattgacc ggtcta atgc ttacaaagct ctttggagcg 360
 tgccttgctc gcagggagca taccagtga tgaagcggg cctcagatga aggtcttagg 420
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Asp	Thr	Ala	Ala	Ala	Ala	Leu	Ser	Thr	Phe	Leu	Ser	Leu	Trp	Ala	Phe	
				20					25					30		
agg	aac	aag	tgt	gca	ttt	gct	ggt	ggt	ggg	gag	ggt	gca	gat	gcg	ctt	564
Arg	Asn	Lys	Cys	Ala	Phe	Ala	Gly	Gly	Gly	Glu	Gly	Ala	Asp	Ala	Leu	
				35					40					45		
gtc	tat	agg	gtg	gtt	cta	gtt	ccc	cag	gcc	tcc	tgt	tcc	caa	cag	gac	612
Val	Tyr	Arg	Val	Val	Leu	Val	Pro	Gln	Ala	Ser	Cys	Ser	Gln	Gln	Asp	
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cta	tgg	ctc	cac	tgt	ggc	tgt	ggc	tgg	aat	tat	gtg	tct	acg	tgt	tct	660
Leu	Trp	Leu	His	Cys	Gly	Cys	Gly	Trp	Asn	Tyr	Val	Ser	Thr	Cys	Ser	
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tcc	cat	acg	gta	agc	tgg	cca	gtg	aag	att	gag	ctg	cgc	aac	cta	gac	708
Ser	His	Thr	Val	Ser	Trp	Pro	Val	Lys	Ile	Glu	Leu	Arg	Asn	Leu	Asp	
				80					85					90		
agt	tgc	agc	ctt	ttt	gtg	agc	ctg	tct	caa	ctt	cta	aat	act	agg	atc	756
Ser	Cys	Ser	Leu	Phe	Val	Ser	Leu	Ser	Gln	Leu	Leu	Asn	Thr	Arg	Ile	
				100					105					110		
tca	cgt	cta	ggc	att	gtg	ttc	aat	ttg	gaa	cag	acc	tct	cta	gaa	ttg	804
Ser	Arg	Leu	Gly	Ile	Val	Phe	Asn	Leu	Glu	Gln	Thr	Ser	Leu	Glu	Leu	
				115					120					125		
ggc	agt	ggt	gtc	ttt	ggc	aga	tgc	agg	ttc	tcc	aaa	gcc	cca	gca	ctt	852
Gly	Ser	Gly	Val	Phe	Gly	Arg	Cys	Arg	Phe	Ser	Lys	Ala	Pro	Ala	Leu	
				130					135					140		
cct	tgc	tca	tgc	aca	ggc	ttg	ttt	gtt	tgt	ttt	tcc	cta	cag	tgc	aca	900
Pro	Cys	Ser	Cys	Thr	Gly	Leu	Phe	Val	Cys	Phe	Ser	Leu	Gln	Cys	Thr	
				145					150					155		

2014/2644

305	310	315	
cag ggc cgg ggt cag gag aaa act aaa gaa gag gct gaa ctt gag gcc	1428		
Gln Gly Arg Gly Gln Glu Lys Thr Lys Glu Glu Ala Glu Leu Glu Ala			
320	325	330	335
aat aat gtg ttt cgt cag aag gtg gaa aat gac gta cca gcg tat gga	1476		
Asn Asn Val Phe Arg Gln Lys Val Glu Asn Asp Val Pro Ala Tyr Gly			
340	345	350	
gaa ccc aag ctg cca tct ggt gga tgc cag ccc ctc gag aga gac agt	1524		
Glu Pro Lys Leu Pro Ser Gly Gly Cys Gln Pro Leu Glu Arg Asp Ser			
355	360	365	
cct gca gaa ggt ttt aga gct gat cca gag ttc tgg tgc tta att gta	1572		
Pro Ala Glu Gly Phe Arg Ala Asp Pro Glu Phe Trp Ser Leu Ile Val			
370	375	380	
gtt gtt ctg gcc atg ttc ctc att aca ccg gag aag ctt gtg atg ccc	1620		
Val Val Leu Ala Met Phe Leu Ile Thr Pro Glu Lys Leu Val Met Pro			
385	390	395	
cga aac cca tca ctt gcc atg cag ctt ctt aga ttt agg ggg tat gag	1668		
Arg Asn Pro Ser Leu Ala Met Gln Leu Leu Arg Phe Arg Gly Tyr Glu			
400	405	410	415
cat att tgg tgg aaa aaa aat tgg gga ttg agc agt ttg ctt tcc ttc	1716		
His Ile Trp Trp Lys Lys Asn Trp Gly Leu Ser Ser Leu Leu Ser Phe			
420	425	430	
tga ctgactgagc cagctgcggc tgctgattca tttctgcctg gccatgtacc	1769		
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ctcttaattc agaggatcaa agaacacctt ggacagtgcc ctgagtgagt gccttgacac	2069		

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<210> 834

<211> 431

<212> PRT

<213> Mus musculus

<400> 834

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Asn	Lys	Cys	Ala	Phe	Ala	Gly	Gly	Gly	Glu	Gly	Ala	Asp	Ala	Leu	Val
	35		40		45										
Tyr	Arg	Val	Val	Leu	Val	Pro	Gln	Ala	Ser	Cys	Ser	Gln	Gln	Asp	Leu
	50		55		60										
Trp	Leu	His	Cys	Gly	Cys	Gly	Trp	Asn	Tyr	Val	Ser	Thr	Cys	Ser	Ser
	65		70		75										80
His	Thr	Val	Ser	Trp	Pro	Val	Lys	Ile	Glu	Leu	Arg	Asn	Leu	Asp	Ser
			85		90										95
Cys	Ser	Leu	Phe	Val	Ser	Leu	Ser	Gln	Leu	Leu	Asn	Thr	Arg	Ile	Ser
	100		105		110										
Arg	Leu	Gly	Ile	Val	Phe	Asn	Leu	Glu	Gln	Thr	Ser	Leu	Glu	Leu	Gly
	115		120		125										
Ser	Gly	Val	Phe	Gly	Arg	Cys	Arg	Phe	Ser	Lys	Ala	Pro	Ala	Leu	Pro
	130		135		140										
Cys	Ser	Cys	Thr	Gly	Leu	Phe	Val	Cys	Phe	Ser	Leu	Gln	Cys	Thr	Ser
	145		150		155										160
Phe	Ile	Pro	Glu	Ala	Arg	Ala	Val	Leu	Asp	Leu	Val	Asp	Gln	Cys	Pro
			165		170										175
Lys	Glu	Val	Gln	Lys	Gly	Lys	Phe	Gln	Val	Ile	Ala	Ile	Glu	Gly	Leu
	180		185		190										
Asp	Ala	Thr	Gly	Lys	Thr	Thr	Leu	Thr	Gln	His	Phe	Lys	Ser	Leu	Ser
	195		200		205										
Arg	Leu	Ser	Ser	Tyr	Ser	Arg	His	Pro	Pro	Cys	Ile	Lys	Pro	Val	Glu
	210		215		220										
Glu	Asp	Leu	Leu	Met	Met	Asn	Leu	Leu	Ser	Phe	Glu	Glu	Pro	Phe	Ile
	225		230		235										240

Leu Trp Ala Asn Tyr Leu Val Ala Ser Glu Ile Ala Lys Glu Ser Thr
 245 250 255
 Asn Phe Pro Val Ile Val Asp Arg Tyr Trp His Ser Thr Ala Thr Tyr
 260 265 270
 Ala Ile Ala Thr Glu Val Ser Gly Gly Leu Gln Tyr Leu Pro Pro Ala
 275 280 285
 His His Pro Val Tyr Gln Trp Pro Gly Asp Leu Leu Lys Pro Asp Leu
 290 295 300
 Val Leu Leu Leu Thr Val Asn Ser Glu Glu Arg Val Arg Arg Leu Gln
 305 310 315 320
 Gly Arg Gly Gln Glu Lys Thr Lys Glu Glu Ala Glu Leu Glu Ala Asn
 325 330 335
 Asn Val Phe Arg Gln Lys Val Glu Asn Asp Val Pro Ala Tyr Gly Glu
 340 345 350
 Pro Lys Leu Pro Ser Gly Gly Cys Gln Pro Leu Glu Arg Asp Ser Pro
 355 360 365
 Ala Glu Gly Phe Arg Ala Asp Pro Glu Phe Trp Ser Leu Ile Val Val
 370 375 380
 Val Leu Ala Met Phe Leu Ile Thr Pro Glu Lys Leu Val Met Pro Arg
 385 390 395 400
 Asn Pro Ser Leu Ala Met Gln Leu Leu Arg Phe Arg Gly Tyr Glu His
 405 410 415
 Ile Trp Trp Lys Lys Asn Trp Gly Leu Ser Ser Leu Leu Ser Phe
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<210> 835

<211> 3071

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (402).. (1466)

<400> 835

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 ggctggcagc cgccgccttt gggcacgtgc agcgggcgga g atg gtg ccc aag agc 416

Met Val Pro Lys Ser

1

5

tcg ggg gcg cgg agc ccc tca cct gga cgg cgg gag gag gac ggg gac 464
 Ser Gly Ala Arg Ser Pro Ser Pro Gly Arg Arg Glu Glu Asp Gly Asp

10

15

20

gag ctg gcc cgc cgc tgc agc acc ttc atg tcc tcg ccg gtg acc gag 512
 Glu Leu Ala Arg Arg Cys Ser Thr Phe Met Ser Ser Pro Val Thr Glu

25

30

35

ctg cgg gag ctg cgg agg agg ccg gag gac atg aag acc aag atg gag 560
 Leu Arg Glu Leu Arg Arg Arg Pro Glu Asp Met Lys Thr Lys Met Glu

40

45

50

ctg atg att atg gag acc cag gct cag gtg tgt cgg gca ctg gcg cag 608
 Leu Met Ile Met Glu Thr Gln Ala Gln Val Cys Arg Ala Leu Ala Gln

55

60

65

gta gat ggc gtt gcc gac ttc act gtg gac cgg tgg gag agg aaa gaa 656
 Val Asp Gly Val Ala Asp Phe Thr Val Asp Arg Trp Glu Arg Lys Glu

70	75	80	85	
gga gga ggt ggc atc acc tgt gtg ctt cag gac ggg cgt gtg ttt gaa	704			
Gly Gly Gly Gly Ile Thr Cys Val Leu Gln Asp Gly Arg Val Phe Glu				
90	95	100		
aag gcc ggg gtg agc att tcc gtc gtt cat ggg aat ctt tct gag gaa	752			
Lys Ala Gly Val Ser Ile Ser Val Val His Gly Asn Leu Ser Glu Glu				
105	110	115		
gca gcg aac caa atg aga ggc aga ggc aaa act ctg aag acg aaa gat	800			
Ala Ala Asn Gln Met Arg Gly Arg Gly Lys Thr Leu Lys Thr Lys Asp				
120	125	130		
agt aaa ttg cca ttt act gct atg ggt gta agt tct gtg att cac ccc	848			
Ser Lys Leu Pro Phe Thr Ala Met Gly Val Ser Ser Val Ile His Pro				
135	140	145		
aag aat cct tat gcg ccc acc atg cat ttc aac tac aga tac ttt gaa	896			
Lys Asn Pro Tyr Ala Pro Thr Met His Phe Asn Tyr Arg Tyr Phe Glu				
150	155	160	165	
gta gag gaa gct gac ggt aac aca cac tgg tgg ttt ggg ggt ggc tgt	944			
Val Glu Glu Ala Asp Gly Asn Thr His Trp Trp Phe Gly Gly Gly Cys				
170	175	180		
gac ctc aca ccg aga tac ttg aac caa gag gat gct gtc cat ttc cac	992			
Asp Leu Thr Pro Arg Tyr Leu Asn Gln Glu Asp Ala Val His Phe His				
185	190	195		
cgt act cta aag gaa gct tgc gat cag cat ggg cca gac atc tac cca	1040			
Arg Thr Leu Lys Glu Ala Cys Asp Gln His Gly Pro Asp Ile Tyr Pro				
200	205	210		
aag ttt aaa aaa tgg tgt gac gac tac ttc ttt ata gtt cac cgc ggg	1088			
Lys Phe Lys Lys Trp Cys Asp Asp Tyr Phe Phe Ile Val His Arg Gly				
215	220	225		
gag cgg agg ggc atc ggc ggc atc ttt ttt gac gat ctt gac tcc ccc	1136			

Glu Arg Arg Gly Ile Gly Gly Ile Phe Phe Asp Asp Leu Asp Ser Pro
 230 235 240 245
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 Ser Lys Glu Glu Ala Phe Arg Phe Val Lys Thr Cys Ala Glu Ala Val
 250 255 260
 gtc cct tcc tat gtt ccc att gtg aag aag cac tgc gat gac tcc tac 1232
 Val Pro Ser Tyr Val Pro Ile Val Lys Lys His Cys Asp Asp Ser Tyr
 265 270 275
 acc ccc agg gac aag ctg tgg cag cag ctg agg aga ggg cgg tat gtg 1280
 Thr Pro Arg Asp Lys Leu Trp Gln Gln Leu Arg Arg Gly Arg Tyr Val
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 295 300 305
 cca gga tcc agg atc gaa agt atc ttg atg tct tta cct cta aca gca 1376
 Pro Gly Ser Arg Ile Glu Ser Ile Leu Met Ser Leu Pro Leu Thr Ala
 310 315 320 325
 aga tgg gag tac atg cat tct ccc cca gag aat tcc aaa gaa gct gaa 1424
 Arg Trp Glu Tyr Met His Ser Pro Pro Glu Asn Ser Lys Glu Ala Glu
 330 335 340
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 Ile Leu Glu Val Leu Arg His Pro Lys Asp Trp Val His
 345 350 355
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<210> 836

<211> 354

<212> PRT

<213> Mus musculus

<400> 836

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35	40	45	
Lys Thr Lys Met Glu Leu Met Ile Met Glu Thr Gln Ala Gln Val Cys			
50	55	60	
Arg Ala Leu Ala Gln Val Asp Gly Val Ala Asp Phe Thr Val Asp Arg			
65	70	75	80
Trp Glu Arg Lys Glu Gly Gly Gly Gly Ile Thr Cys Val Leu Gln Asp			
85	90	95	
Gly Arg Val Phe Glu Lys Ala Gly Val Ser Ile Ser Val Val His Gly			
100	105	110	
Asn Leu Ser Glu Glu Ala Ala Asn Gln Met Arg Gly Arg Gly Lys Thr			
115	120	125	
Leu Lys Thr Lys Asp Ser Lys Leu Pro Phe Thr Ala Met Gly Val Ser			
130	135	140	
Ser Val Ile His Pro Lys Asn Pro Tyr Ala Pro Thr Met His Phe Asn			
145	150	155	160
Tyr Arg Tyr Phe Glu Val Glu Glu Ala Asp Gly Asn Thr His Trp Trp			
165	170	175	
Phe Gly Gly Gly Cys Asp Leu Thr Pro Arg Tyr Leu Asn Gln Glu Asp			
180	185	190	
Ala Val His Phe His Arg Thr Leu Lys Glu Ala Cys Asp Gln His Gly			
195	200	205	
Pro Asp Ile Tyr Pro Lys Phe Lys Lys Trp Cys Asp Asp Tyr Phe Phe			
210	215	220	
Ile Val His Arg Gly Glu Arg Arg Gly Ile Gly Gly Ile Phe Phe Asp			
225	230	235	240

Asp Leu Asp Ser Pro Ser Lys Glu Glu Ala Phe Arg Phe Val Lys Thr
 245 250 255

Cys Ala Glu Ala Val Val Pro Ser Tyr Val Pro Ile Val Lys Lys His
 260 265 270

Cys Asp Asp Ser Tyr Thr Pro Arg Asp Lys Leu Trp Gln Gln Leu Arg
 275 280 285

Arg Gly Arg Tyr Val Glu Phe Asn Leu Leu Tyr Asp Arg Gly Thr Lys
 290 295 300

Phe Gly Leu Phe Thr Pro Gly Ser Arg Ile Glu Ser Ile Leu Met Ser
 305 310 315 320

Leu Pro Leu Thr Ala Arg Trp Glu Tyr Met His Ser Pro Pro Glu Asn
 325 330 335

Ser Lys Glu Ala Glu Ile Leu Glu Val Leu Arg His Pro Lys Asp Trp
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Val His

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<213> Mus musculus

<400> 837

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<222> (8).. (2029)

<400> 838

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 Val Arg Leu Gln Tyr Gly Ser Arg Val Glu Ala Val Tyr Val Leu Gly
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 Thr Gln Leu Trp Thr Asp Val Tyr Ser Ala Ala Pro Ala Gly Ala Lys
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 acc ttc agc ctg aag cac tcg gag ggt gtg aag gtg gag gtc gta cgt 193
 Thr Phe Ser Leu Lys His Ser Glu Gly Val Lys Val Glu Val Val Arg

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Cys Ser Asp Glu Lys Val Tyr Ser Lys Gln Asp Leu Gln Asp Met Ser			
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Ile Asp Leu Pro Ala Leu Phe Lys Met Asp Glu Asn His Gln Ala Arg			
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Phe Ile Asp Asp Ile Ser Ala Tyr His Lys Phe Leu Gly Glu Val His			
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Met Val Pro

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<212> PRT

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<400> 839

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Leu Lys Asp Phe Pro Ile Lys Gln Leu Leu Gly Pro Asp Phe Gly Tyr		
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Val Thr Arg Glu Pro Leu Phe Glu Thr Val Thr Ser Leu Asp Ser Phe		
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Gly Asn Leu Glu Val Ser Pro Pro Val Thr Val Asn Gly Lys Glu Tyr		
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Pro Leu Gly Arg Ile Leu Ile Gly Ser Ser Phe Pro Leu Ser Gly Gly		
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		445
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		460
Gln Ala Pro Val Glu Leu Tyr Ser Asp Trp Leu Thr Val Gly His Val		
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ggc tcg tta ggg aac atc cat cac aag cca gga ggt ggc cag gtg gaa	900		
Gly Ser Leu Gly Asn Ile His His Lys Pro Gly Gly Gly Gln Val Glu			
225	230	235	
gta aaa tca gag aag ctg gac ttc aag gac aga gtc cag tcg aag att	948		
Val Lys Ser Glu Lys Leu Asp Phe Lys Asp Arg Val Gln Ser Lys Ile			
240	245	250	
ggc tcc ttg gat aat atc acc cac gtc cct gga gga ggg aat aag aag	996		
Gly Ser Leu Asp Asn Ile Thr His Val Pro Gly Gly Gly Asn Lys Lys			
255	260	265	270
att gaa acc cac aag ctg acc ttc agg gag aat gcc aaa gcc aag aca	1044		

Ile Glu Thr His Lys Leu Thr Phe Arg Glu Asn Ala Lys Ala Lys Thr
 275 280 285
 gac cat gga gca gaa att gtg tat aag tca ccc gtg gtg tct ggg gac 1092
 Asp His Gly Ala Glu Ile Val Tyr Lys Ser Pro Val Val Ser Gly Asp
 290 295 300
 aca tct cca cgg cac ctc agc aat gtg tct tcc acg ggc agc atc gac 1140
 Thr Ser Pro Arg His Leu Ser Asn Val Ser Ser Thr Gly Ser Ile Asp
 305 310 315
 atg gtg gac tca cca cag ctt gcc aca cta gcc gat gaa gtg tct gct 1188
 Met Val Asp Ser Pro Gln Leu Ala Thr Leu Ala Asp Glu Val Ser Ala
 320 325 330
 tcc ttg gcc aag cag gga aaa gct gct tta ctg agt tct caa gtt tgg 1236
 Ser Leu Ala Lys Gln Gly Lys Ala Ala Leu Leu Ser Ser Gln Val Trp
 335 340 345 350
 aac tac agc cat gat ttg gcc acc att aca gac ctg gga ctt tag 1281
 Asn Tyr Ser His Asp Leu Ala Thr Ile Thr Asp Leu Gly Leu
 355 360 365
 ggctaaccag atctttgtaa ggacttgtgc ctcttggggg acctctgcct gttctcatgc 1341
 ttggccctct ggcacttctg tagtgggagg gatgggggt ggtattctgg gatgtgggtc 1401
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<210> 841

<211> 364

<212> PRT

<213> Mus musculus

<400> 841

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 35 40 45
 Ala Ala Gly His Val Thr Gln Ala Arg Val Ala Ser Lys Asp Arg Thr
 50 55 60
 Gly Asn Asp Glu Lys Lys Ala Lys Gly Ala Asp Gly Lys Thr Gly Ala
 65 70 75 80
 Lys Ile Ala Thr Pro Arg Gly Ala Ala Ser Pro Ala Gln Lys Gly Thr
 85 90 95
 Ser Asn Ala Thr Arg Ile Pro Ala Lys Thr Thr Pro Ser Pro Lys Thr
 100 105 110
 Pro Pro Gly Ser Gly Glu Pro Pro Lys Ser Gly Glu Arg Ser Gly Tyr
 115 120 125
 Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr Pro
 130 135 140

Ser Leu Pro Thr Pro Pro Thr Arg Glu Pro Lys Lys Val Ala Val Val
 145 150 155 160
 Arg Thr Pro Pro Lys Ser Pro Ser Ala Ser Lys Ser Arg Leu Gln Thr
 165 170 175
 Ala Pro Val Pro Met Pro Asp Leu Lys Asn Val Arg Ser Lys Ile Gly
 180 185 190
 Ser Thr Glu Asn Leu Lys His Gln Pro Gly Gly Gly Lys Val Gln Ile
 195 200 205
 Val Tyr Lys Pro Val Asp Leu Ser Lys Val Thr Ser Lys Cys Gly Ser
 210 215 220
 Leu Gly Asn Ile His His Lys Pro Gly Gly Gly Gln Val Glu Val Lys
 225 230 235 240
 Ser Glu Lys Leu Asp Phe Lys Asp Arg Val Gln Ser Lys Ile Gly Ser
 245 250 255
 Leu Asp Asn Ile Thr His Val Pro Gly Gly Gly Asn Lys Lys Ile Glu
 260 265 270
 Thr His Lys Leu Thr Phe Arg Glu Asn Ala Lys Ala Lys Thr Asp His
 275 280 285
 Gly Ala Glu Ile Val Tyr Lys Ser Pro Val Val Ser Gly Asp Thr Ser
 290 295 300
 Pro Arg His Leu Ser Asn Val Ser Ser Thr Gly Ser Ile Asp Met Val
 305 310 315 320
 Asp Ser Pro Gln Leu Ala Thr Leu Ala Asp Glu Val Ser Ala Ser Leu
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<210> 842

<211> 2152

<212> DNA

<213> *Mus musculus*

<220>

<221> CDS

<222> (16).. (1659)

<400> 842

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Arg Val Phe Val Val Gly Val Gly Met Thr Lys Phe Met Lys Pro Gly
              15              20              25
ggt gag aac tca aga gac tat cct gat atg gca aag gaa gca ggc cag  147
Gly Glu Asn Ser Arg Asp Tyr Pro Asp Met Ala Lys Glu Ala Gly Gln
              30              35              40
aag gca ttg gaa gat gca cag atc cct tac tcc gca gtg gaa cag gca  195
Lys Ala Leu Glu Asp Ala Gln Ile Pro Tyr Ser Ala Val Glu Gln Ala
              45              50              55              60
tgc gtt ggc tat gtg tat ggt gat tcc acc agt ggg cag agg gct atc  243
Cys Val Gly Tyr Val Tyr Gly Asp Ser Thr Ser Gly Gln Arg Ala Ile
              65              70              75
tat cat agt ttg gga ctg act ggc att cct ata att aat gtc aac aat  291
Tyr His Ser Leu Gly Leu Thr Gly Ile Pro Ile Ile Asn Val Asn Asn
              80              85              90
aac tgt tct act ggt tcg act gct ttg ttt atg gcc cat caa ctg att  339

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Asn Cys Ser Thr Gly Ser Thr Ala Leu Phe Met Ala His Gln Leu Ile	
95 100 105	
caa gga ggc ttg gca aat tgt gtg ttg gct ctt ggg ttt gag aag atg	387
Gln Gly Gly Leu Ala Asn Cys Val Leu Ala Leu Gly Phe Glu Lys Met	
110 115 120	
gag agg gga tcc att gga aca aaa ttc tca gat cgg acc act cca act	435
Glu Arg Gly Ser Ile Gly Thr Lys Phe Ser Asp Arg Thr Thr Pro Thr	
125 130 135 140	
gat aaa cat att gaa gtc ttg atc gat aag tat gga ttg tct gca cat	483
Asp Lys His Ile Glu Val Leu Ile Asp Lys Tyr Gly Leu Ser Ala His	
145 150 155	
ccg att act cct cag atg ttt ggg tat gct ggg aaa gaa cat atg gaa	531
Pro Ile Thr Pro Gln Met Phe Gly Tyr Ala Gly Lys Glu His Met Glu	
160 165 170	
aaa tat gga aca aaa gtt gaa cac ttt gca aaa att gga tgg aaa aat	579
Lys Tyr Gly Thr Lys Val Glu His Phe Ala Lys Ile Gly Trp Lys Asn	
175 180 185	
cat aaa cac tca gtt aat aac acg tat tcc cag ttc caa gat gaa tac	627
His Lys His Ser Val Asn Asn Thr Tyr Ser Gln Phe Gln Asp Glu Tyr	
190 195 200	
agc tta gaa gaa gla atg aaa tca aaa cca gtt ttc gat ttt ctg act	675
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atc ttg caa tgc tgc ccc acc tca gat ggt gcc tgc gcc gcg att ctg	723
Ile Leu Gln Cys Cys Pro Thr Ser Asp Gly Ala Cys Ala Ala Ile Leu	
225 230 235	
tcc agc gag gag ttt gtg cag cag tac ggc ctg cag tcc aaa gcg gtg	771
Ser Ser Glu Glu Phe Val Gln Gln Tyr Gly Leu Gln Ser Lys Ala Val	
240 245 250	

gag att gtg gcc cag gag atg atg act gac tta ccc agt acg ttt gaa 819
 Glu Ile Val Ala Gln Glu Met Met Thr Asp Leu Pro Ser Thr Phe Glu
 255 260 265
 gag aaa agt att att aaa gtg gtt ggc tat gat atg agt aaa gaa gct 867
 Glu Lys Ser Ile Ile Lys Val Val Gly Tyr Asp Met Ser Lys Glu Ala
 270 275 280
 gcc agg aga tgc tat gag aag tcc ggc ctg aca ccc aac gat gtc gac 915
 Ala Arg Arg Cys Tyr Glu Lys Ser Gly Leu Thr Pro Asn Asp Val Asp
 285 290 295 300
 gtg ata gag ctt cac gat tgc ttc tct gtc aat gaa ctc atc act tac 963
 Val Ile Glu Leu His Asp Cys Phe Ser Val Asn Glu Leu Ile Thr Tyr
 305 310 315
 gaa gca ctg ggg ctc tgt cca gaa gga caa ggt gga acc ctg gtg gac 1011
 Glu Ala Leu Gly Leu Cys Pro Glu Gly Gln Gly Gly Thr Leu Val Asp
 320 325 330
 aga ggg gac aac act tac gga gga aag tgg gtc atc aac cct agt gga 1059
 Arg Gly Asp Asn Thr Tyr Gly Gly Lys Trp Val Ile Asn Pro Ser Gly
 335 340 345
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 350 355 360
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 Cys Ala Glu Leu Cys Trp Gln Leu Arg Gly Glu Ala Gly Lys Arg Gln
 365 370 375 380
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 Val Pro Gly Ala Lys Val Ala Leu Gln His Asn Leu Gly Leu Gly Gly
 385 390 395
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 Ala Val Val Val Thr Leu Tyr Arg Met Gly Phe Pro Glu Ala Ala Ser

400	405	410	
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Ser Phe Arg Thr His Gln Val Ser Ala Ala Pro Thr Ser Ser Ala Gly			
415	420	425	
gat gga ttc aag gca aac ctc gtc ttt aag gag att gag aag aag ctt			1347
Asp Gly Phe Lys Ala Asn Leu Val Phe Lys Glu Ile Glu Lys Lys Leu			
430	435	440	
gaa gag gaa ggg gaa cag ttc gtc aag aaa atc ggt ggc att ttt gcc			1395
Glu Glu Glu Gly Glu Gln Phe Val Lys Lys Ile Gly Gly Ile Phe Ala			
445	450	455	460
ttc aaa gtg aaa gat ggc cct gga ggc aaa gaa gct acc tgg gtg gtg			1443
Phe Lys Val Lys Asp Gly Pro Gly Gly Lys Glu Ala Thr Trp Val Val			
465	470	475	
gat gtg aag aat ggc aaa gga tct gtg ctt ccc aat tca gat aag aag			1491
Asp Val Lys Asn Gly Lys Gly Ser Val Leu Pro Asn Ser Asp Lys Lys			
480	485	490	
gct gac tgc aca atc acc atg gcc gac tca gac ttg ctg gct ttg atg			1539
Ala Asp Cys Thr Ile Thr Met Ala Asp Ser Asp Leu Leu Ala Leu Met			
495	500	505	
act gga aaa atg aac cct cag tcg gcc ttc ttt caa ggg aaa ctg aag			1587
Thr Gly Lys Met Asn Pro Gln Ser Ala Phe Phe Gln Gly Lys Leu Lys			
510	515	520	
att gct ggt aac atg gga ctg gcc atg aaa cta cag aac ctt cag ctt			1635
Ile Ala Gly Asn Met Gly Leu Ala Met Lys Leu Gln Asn Leu Gln Leu			
525	530	535	540
cag ccg ggc aaa gct aag ctg tga ggagtcctt tggcaacctc aggacatcaa			1689
Gln Pro Gly Lys Ala Lys Leu			
545			
gatgagatgt gtagataggt agagatccac gtctcgtcgt caggccttag actgacacct			1749

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<210> 843

<211> 547

<212> PRT

<213> Mus musculus

<400> 843

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				20					25					30	
Arg	Asp	Tyr	Pro	Asp	Met	Ala	Lys	Glu	Ala	Gly	Gln	Lys	Ala	Leu	Glu
				35					40					45	
Asp	Ala	Gln	Ile	Pro	Tyr	Ser	Ala	Val	Glu	Gln	Ala	Cys	Val	Gly	Tyr
				50					55					60	
Val	Tyr	Gly	Asp	Ser	Thr	Ser	Gly	Gln	Arg	Ala	Ile	Tyr	His	Ser	Leu
				65					70					75	
Gly	Leu	Thr	Gly	Ile	Pro	Ile	Ile	Asn	Val	Asn	Asn	Asn	Cys	Ser	Thr
								85						90	
Gly	Ser	Thr	Ala	Leu	Phe	Met	Ala	His	Gln	Leu	Ile	Gln	Gly	Gly	Leu
				100					105					110	
Ala	Asn	Cys	Val	Leu	Ala	Leu	Gly	Phe	Glu	Lys	Met	Glu	Arg	Gly	Ser

115	120	125
Ile Gly Thr Lys Phe Ser Asp Arg Thr Thr Pro Thr Asp Lys His Ile		
130	135	140
Glu Val Leu Ile Asp Lys Tyr Gly Leu Ser Ala His Pro Ile Thr Pro		
145	150	155
Gln Met Phe Gly Tyr Ala Gly Lys Glu His Met Glu Lys Tyr Gly Thr		
165	170	175
Lys Val Glu His Phe Ala Lys Ile Gly Trp Lys Asn His Lys His Ser		
180	185	190
Val Asn Asn Thr Tyr Ser Gln Phe Gln Asp Glu Tyr Ser Leu Glu Glu		
195	200	205
Val Met Lys Ser Lys Pro Val Phe Asp Phe Leu Thr Ile Leu Gln Cys		
210	215	220
Cys Pro Thr Ser Asp Gly Ala Cys Ala Ala Ile Leu Ser Ser Glu Glu		
225	230	235
Phe Val Gln Gln Tyr Gly Leu Gln Ser Lys Ala Val Glu Ile Val Ala		
245	250	255
Gln Glu Met Met Thr Asp Leu Pro Ser Thr Phe Glu Glu Lys Ser Ile		
260	265	270
Ile Lys Val Val Gly Tyr Asp Met Ser Lys Glu Ala Ala Arg Arg Cys		
275	280	285
Tyr Glu Lys Ser Gly Leu Thr Pro Asn Asp Val Asp Val Ile Glu Leu		
290	295	300
His Asp Cys Phe Ser Val Asn Glu Leu Ile Thr Tyr Glu Ala Leu Gly		
305	310	315
Leu Cys Pro Glu Gly Gln Gly Gly Thr Leu Val Asp Arg Gly Asp Asn		
325	330	335
Thr Tyr Gly Gly Lys Trp Val Ile Asn Pro Ser Gly Gly Leu Ile Ser		
340	345	350

Lys Gly His Pro Leu Gly Ala Thr Gly Leu Ala Gln Cys Ala Glu Leu
 355 360 365
 Cys Trp Gln Leu Arg Gly Glu Ala Gly Lys Arg Gln Val Pro Gly Ala
 370 375 380
 Lys Val Ala Leu Gln His Asn Leu Gly Leu Gly Gly Ala Val Val Val
 385 390 395 400
 Thr Leu Tyr Arg Met Gly Phe Pro Glu Ala Ala Ser Ser Phe Arg Thr
 405 410 415
 His Gln Val Ser Ala Ala Pro Thr Ser Ser Ala Gly Asp Gly Phe Lys
 420 425 430
 Ala Asn Leu Val Phe Lys Glu Ile Glu Lys Lys Leu Glu Glu Glu Gly
 435 440 445
 Glu Gln Phe Val Lys Lys Ile Gly Gly Ile Phe Ala Phe Lys Val Lys
 450 455 460
 Asp Gly Pro Gly Gly Lys Glu Ala Thr Trp Val Val Asp Val Lys Asn
 465 470 475 480
 Gly Lys Gly Ser Val Leu Pro Asn Ser Asp Lys Lys Ala Asp Cys Thr
 485 490 495
 Ile Thr Met Ala Asp Ser Asp Leu Leu Ala Leu Met Thr Gly Lys Met
 500 505 510
 Asn Pro Gln Ser Ala Phe Phe Gln Gly Lys Leu Lys Ile Ala Gly Asn
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 Ala Lys Leu
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<210> 844

<211> 736

<212> DNA

<213> Mus musculus

<400> 844

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aaatagtgat tcatgaacat atctctctgc agatgatctg agatttagct atgggcatta 660
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736

<210> 845

<211> 802

<212> DNA

<213> Mus musculus

<400> 845

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gacagattcc aatctacatc tacagacaca ttctggatac cgagtagaac ttgatttccc 180
tccctcaact gcttttctc agctcttcc tctaattttt gacttccaca tcttttttac 240
catgttagtc tgactataga aaacaccctg tggatgaaggc caggcagctc atcaggagac 300

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acctatgcac cagagtaata caggagtgat tctgccaacc aggatacgca gcacttcac 360
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<210> 846

<211> 3524

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (256).. (2274)

<400> 846

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 gccgcgcgcc ccgcccaccc cggccctccc cggctgtctc tcccggcgg aggcaagagg 240
 tggttggggg gaacc atg gct gac gtt tac ccg gcc aac gac tcc acg gcg 291

Met Ala Asp Val Tyr Pro Ala Asn Asp Ser Thr Ala

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5

10

tct cag gac gtg gcc aac cgc ttc gcc cgc aaa ggg gcg ctg agg cag 339

Ser Gln Asp Val Ala Asn Arg Phe Ala Arg Lys Gly Ala Leu Arg Gln

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aag aac gtg cat gag gtg aaa gac cac aaa ttc atc gcc cgc ttc ttc	387		
Lys Asn Val His Glu Val Lys Asp His Lys Phe Ile Ala Arg Phe Phe			
30	35	40	
aag caa ccc acc ttc tgc agc cac tgc acc gac ttc atc tgg ggg ttt	435		
Lys Gln Pro Thr Phe Cys Ser His Cys Thr Asp Phe Ile Trp Gly Phe			
45	50	55	60
ggg aaa caa ggc ttc cag tgc caa gtt tgc tgt ttt gig gtt cat aag	483		
Gly Lys Gln Gly Phe Gln Cys Gln Val Cys Cys Phe Val Val His Lys			
65	70	75	
agg tgc cat gag ttc gtt acg ttc tct tgt ccg ggt gcg gat aag gga	531		
Arg Cys His Glu Phe Val Thr Phe Ser Cys Pro Gly Ala Asp Lys Gly			
80	85	90	
cct gac act gac gac ccc agg agc aag cac aag ttc aaa atc cac aca	579		
Pro Asp Thr Asp Asp Pro Arg Ser Lys His Lys Phe Lys Ile His Thr			
95	100	105	
tac gga agc cct acc ttc tgt gat cac tgt ggg tcc ctg ctc tat gga	627		
Tyr Gly Ser Pro Thr Phe Cys Asp His Cys Gly Ser Leu Leu Tyr Gly			
110	115	120	
ctt atc cac caa ggg atg aaa tgt gac acc tgc gac atg aat gtt cac	675		
Leu Ile His Gln Gly Met Lys Cys Asp Thr Cys Asp Met Asn Val His			
125	130	135	140
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Asn Gln Cys Val Ile Asn Asp Pro Ser Leu Cys Gly Met Asp His Thr			
145	150	155	
gag aag agg ggg cgg att tat ctg aag gct gag gtc act gat gaa aag	771		
Glu Lys Arg Gly Arg Ile Tyr Leu Lys Ala Glu Val Thr Asp Glu Lys			
160	165	170	
ctc cac gtc acg gta cga gat gca aaa aat cta atc cct atg gat cca	819		

Leu His Val Thr Val Arg Asp Ala Lys Asn Leu Ile Pro Met Asp Pro
 175 180 185
 aat ggg ctt tcg gat cct tat gtg aag ctg aaa cta atc cct gac ccc 867
 Asn Gly Leu Ser Asp Pro Tyr Val Lys Leu Lys Leu Ile Pro Asp Pro
 190 195 200
 aag aat gag agc aaa cag aaa acc aaa acc atc cgc tcc aac ctg aat 915
 Lys Asn Glu Ser Lys Gln Lys Thr Lys Thr Ile Arg Ser Asn Leu Asn
 205 210 215 220
 cct cag tgg aat gag tcc ttc acg ttc aaa tta aaa cct tca gac aaa 963
 Pro Gln Trp Asn Glu Ser Phe Thr Phe Lys Leu Lys Pro Ser Asp Lys
 225 230 235
 gac cgg cga ctg tct gta gaa atc tgg gac tgg gat cgg acg act cgg 1011
 Asp Arg Arg Leu Ser Val Glu Ile Trp Asp Trp Asp Arg Thr Thr Arg
 240 245 250
 aat gac ttc atg gga tcc ctt tcc ttt ggt gtc tca gag cta atg aag 1059
 Asn Asp Phe Met Gly Ser Leu Ser Phe Gly Val Ser Glu Leu Met Lys
 255 260 265
 atg ccg gcc agt gga tgg tat aaa gct cac aac caa gaa gag ggc gaa 1107
 Met Pro Ala Ser Gly Trp Tyr Lys Ala His Asn Gln Glu Glu Gly Glu
 270 275 280
 tat tac aac gtg ccc att cca gaa gga gat gaa gaa ggc aac atg gaa 1155
 Tyr Tyr Asn Val Pro Ile Pro Glu Gly Asp Glu Glu Gly Asn Met Glu
 285 290 295 300
 ctc agg cag aag ttt gag aaa gcc aag cta ggt cct gtt ggt aac aaa 1203
 Leu Arg Gln Lys Phe Glu Lys Ala Lys Leu Gly Pro Val Gly Asn Lys
 305 310 315
 gtc atc agc cct tca gaa gac aga aag caa cca tcc aac aac ctg gac 1251
 Val Ile Ser Pro Ser Glu Asp Arg Lys Gln Pro Ser Asn Asn Leu Asp
 320 325 330

aga gtg aaa ctc aca gac ttc aac ttc ctc atg gtg ctg ggg aag ggg 1299
 Arg Val Lys Leu Thr Asp Phe Asn Phe Leu Met Val Leu Gly Lys Gly
 335 340 345
 agt ttt ggg aag gtg atg ctt gct gac agg aag gga acg gag gaa ctg 1347
 Ser Phe Gly Lys Val Met Leu Ala Asp Arg Lys Gly Thr Glu Glu Leu
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 tac gcc atc aag atc ctg aag aag gac gtg gtg atc cag gac gac gac 1395
 Tyr Ala Ile Lys Ile Leu Lys Lys Asp Val Val Ile Gln Asp Asp Asp
 365 370 375 380
 gtg gag tgc acc atg gtg gag aag cgc gtg ctg gcc ctg ctg gac aag 1443
 Val Glu Cys Thr Met Val Glu Lys Arg Val Leu Ala Leu Leu Asp Lys
 385 390 395
 ccg cca ttt ctg aca cag ctg cac tcc tgc ttc cag aca gtg gac cgg 1491
 Pro Pro Phe Leu Thr Gln Leu His Ser Cys Phe Gln Thr Val Asp Arg
 400 405 410
 ctg tac ttc gtc atg gaa tac gtc aac ggc ggg gat ctt atg tac cac 1539
 Leu Tyr Phe Val Met Glu Tyr Val Asn Gly Gly Asp Leu Met Tyr His
 415 420 425
 att cag caa gtc ggg aaa ttt aag gag cca caa gca gta ttc tac gca 1587
 Ile Gln Gln Val Gly Lys Phe Lys Glu Pro Gln Ala Val Phe Tyr Ala
 430 435 440
 gcc gag atc tcc atc gga ctg ttc ttc ctt cat aaa aga ggg atc att 1635
 Ala Glu Ile Ser Ile Gly Leu Phe Phe Leu His Lys Arg Gly Ile Ile
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 Tyr Arg Asp Leu Lys Leu Asn Asn Val Met Leu Asn Ser Glu Gly His
 465 470 475
 atc aaa atc gcc gac ttc ggg atg tgc aag gaa cac atg atg gat gga 1731
 Ile Lys Ile Ala Asp Phe Gly Met Cys Lys Glu His Met Met Asp Gly

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Val Thr Thr Arg Thr Phe Cys Gly Thr Pro Asp Tyr Ile Ala Pro Glu			
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Ile Ile Ala Tyr Gln Pro Tyr Gly Lys Ser Val Asp Trp Trp Ala Tyr			
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ggt gtg ctg ctg tac gag atg cta gcc ggg cag cct ccg ttt gat ggt	1875		
Gly Val Leu Leu Tyr Glu Met Leu Ala Gly Gln Pro Pro Phe Asp Gly			
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Glu Asp Glu Asp Glu Leu Phe Gln Ser Ile Met Glu His Asn Val Ser			
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tac ccc aaa tcc ttg tcc aag gaa gcc gtc tcc atc tgc aaa gga ctt	1971		
Tyr Pro Lys Ser Leu Ser Lys Glu Ala Val Ser Ile Cys Lys Gly Leu			
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Met Thr Lys Gln Pro Ala Lys Arg Leu Gly Cys Gly Pro Glu Gly Glu			
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agg gat gtc aga gag cat gcc ttc ttc agg agg atc gac tgg gag aaa	2067		
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Leu Glu Asn Arg Glu Ile Gln Pro Pro Phe Lys Pro Lys Val Cys Gly			
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aaa gga gca gaa aac ttt gac aag ttc ttc acg cga gga cag cct gtc	2163		
Lys Gly Ala Glu Asn Phe Asp Lys Phe Phe Thr Arg Gly Gln Pro Val			
625	630	635	
tta aca cca cca gat cag ctg gtc att gct aac ata gac caa tct gat	2211		

Leu Thr Pro Pro Asp Gln Leu Val Ile Ala Asn Ile Asp Gln Ser Asp
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 Phe Glu Gly Phe Ser Tyr Val Asn Pro Gln Phe Val His Pro Ile Leu
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 Gln Ser Ala Val
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 ggatcaagat actttatgct gacatcaact ctttgatgtt gtcttgctag aaggatttta 3454
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<210> 847

<211> 672

<212> PRT

<213> Mus musculus

<400> 847

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Glu Val Lys Asp His Lys Phe Ile Ala Arg Phe Phe Lys Gln Pro Thr
      35              40              45
Phe Cys Ser His Cys Thr Asp Phe Ile Trp Gly Phe Gly Lys Gln Gly
      50              55              60
Phe Gln Cys Gln Val Cys Cys Phe Val Val His Lys Arg Cys His Glu
      65              70              75              80
Phe Val Thr Phe Ser Cys Pro Gly Ala Asp Lys Gly Pro Asp Thr Asp
      85              90              95
Asp Pro Arg Ser Lys His Lys Phe Lys Ile His Thr Tyr Gly Ser Pro
      100             105             110
Thr Phe Cys Asp His Cys Gly Ser Leu Leu Tyr Gly Leu Ile His Gln
      115             120             125
Gly Met Lys Cys Asp Thr Cys Asp Met Asn Val His Asn Gln Cys Val
      130             135             140
Ile Asn Asp Pro Ser Leu Cys Gly Met Asp His Thr Glu Lys Arg Gly
      145             150             155             160
Arg Ile Tyr Leu Lys Ala Glu Val Thr Asp Glu Lys Leu His Val Thr
      165             170             175

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Val Arg Asp Ala Lys Asn Leu Ile Pro Met Asp Pro Asn Gly Leu Ser
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 Asp Pro Tyr Val Lys Leu Lys Leu Ile Pro Asp Pro Lys Asn Glu Ser
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 Lys Gln Lys Thr Lys Thr Ile Arg Ser Asn Leu Asn Pro Gln Trp Asn
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 Glu Ser Phe Thr Phe Lys Leu Lys Pro Ser Asp Lys Asp Arg Arg Leu
 225 230 235 240
 Ser Val Glu Ile Trp Asp Trp Asp Arg Thr Thr Arg Asn Asp Phe Met
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 Gly Ser Leu Ser Phe Gly Val Ser Glu Leu Met Lys Met Pro Ala Ser
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 Gly Trp Tyr Lys Ala His Asn Gln Glu Glu Gly Glu Tyr Tyr Asn Val
 275 280 285
 Pro Ile Pro Glu Gly Asp Glu Glu Gly Asn Met Glu Leu Arg Gln Lys
 290 295 300
 Phe Glu Lys Ala Lys Leu Gly Pro Val Gly Asn Lys Val Ile Ser Pro
 305 310 315 320
 Ser Glu Asp Arg Lys Gln Pro Ser Asn Asn Leu Asp Arg Val Lys Leu
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 Thr Asp Phe Asn Phe Leu Met Val Leu Gly Lys Gly Ser Phe Gly Lys
 340 345 350
 Val Met Leu Ala Asp Arg Lys Gly Thr Glu Glu Leu Tyr Ala Ile Lys
 355 360 365
 Ile Leu Lys Lys Asp Val Val Ile Gln Asp Asp Asp Val Glu Cys Thr
 370 375 380
 Met Val Glu Lys Arg Val Leu Ala Leu Leu Asp Lys Pro Pro Phe Leu
 385 390 395 400
 Thr Gln Leu His Ser Cys Phe Gln Thr Val Asp Arg Leu Tyr Phe Val

405	410	415
Met Glu Tyr Val Asn Gly Gly Asp Leu	Met Tyr His Ile Gln Gln Val	
420	425	430
Gly Lys Phe Lys Glu Pro Gln Ala Val Phe Tyr Ala Ala Glu Ile Ser		
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Ile Gly Leu Phe Phe Leu His Lys Arg Gly Ile Ile Tyr Arg Asp Leu		
450	455	460
Lys Leu Asn Asn Val Met Leu Asn Ser Glu Gly His Ile Lys Ile Ala		
465	470	475
Asp Phe Gly Met Cys Lys Glu His Met Met Asp Gly Val Thr Thr Arg		
485	490	495
Thr Phe Cys Gly Thr Pro Asp Tyr Ile Ala Pro Glu Ile Ile Ala Tyr		
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Gln Pro Tyr Gly Lys Ser Val Asp Trp Trp Ala Tyr Gly Val Leu Leu		
515	520	525
Tyr Glu Met Leu Ala Gly Gln Pro Pro Phe Asp Gly Glu Asp Glu Asp		
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Glu Leu Phe Gln Ser Ile Met Glu His Asn Val Ser Tyr Pro Lys Ser		
545	550	555
Leu Ser Lys Glu Ala Val Ser Ile Cys Lys Gly Leu Met Thr Lys Gln		
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Pro Ala Lys Arg Leu Gly Cys Gly Pro Glu Gly Glu Arg Asp Val Arg		
580	585	590
Glu His Ala Phe Phe Arg Arg Ile Asp Trp Glu Lys Leu Glu Asn Arg		
595	600	605
Glu Ile Gln Pro Pro Phe Lys Pro Lys Val Cys Gly Lys Gly Ala Glu		
610	615	620
Asn Phe Asp Lys Phe Phe Thr Arg Gly Gln Pro Val Leu Thr Pro Pro		
625	630	635
		640

Asp Gln Leu Val Ile Ala Asn Ile Asp Gln Ser Asp Phe Glu Gly Phe

645

650

655

Ser Tyr Val Asn Pro Gln Phe Val His Pro Ile Leu Gln Ser Ala Val

660

665

670

<210> 848

<211> 2757

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (37).. (1845)

<400> 848

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tcg ctc tgg ttt ccc ctg ctg ctg ctc ctg ctg ctg ccg ccg aca ccc 102

Ser Leu Trp Phe Pro Leu Leu Leu Leu Leu Leu Leu Pro Pro Thr Pro

10

15

20

tcg gtc ctg ctc gca gat cct ggg gtg ccc tca cca gtc aat ccc tgt 150

Ser Val Leu Leu Ala Asp Pro Gly Val Pro Ser Pro Val Asn Pro Cys

25

30

35

tgt tac tat ccg tgc cag aac cag ggt gtc tgt gtc cgc ttt ggc ctc 198

Cys Tyr Tyr Pro Cys Gln Asn Gln Gly Val Cys Val Arg Phe Gly Leu

40

45

50

gac aac tac cag tgt gat tgt act cgc acg ggc tac tca ggc ccc aac 246

Asp Asn Tyr Gln Cys Asp Cys Thr Arg Thr Gly Tyr Ser Gly Pro Asn

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tgt acc atc cct gag atc tgg acc tgg ctt cgg aat tct ctg cgg ccc	294			
Cys Thr Ile Pro Glu Ile Trp Thr Trp Leu Arg Asn Ser Leu Arg Pro				
75	80	85		
agc ccc tgg ttc acc cat ttc ctg ctg aca cat gga tac tgg ctc tgg	342			
Ser Pro Ser Phe Thr His Phe Leu Leu Thr His Gly Tyr Trp Leu Trp				
90	95	100		
gaa ttt gtg aat gcc acc ttc atc cga gaa gta ctc atg cgc ctg gta	390			
Glu Phe Val Asn Ala Thr Phe Ile Arg Glu Val Leu Met Arg Leu Val				
105	110	115		
ctc aca gtg cgg tcc aac ctt atc ccc agc cct ccg acc tac aac tca	438			
Leu Thr Val Arg Ser Asn Leu Ile Pro Ser Pro Pro Thr Tyr Asn Ser				
120	125	130		
gcg cat gac tac atc agc tgg gag tcc ttc tcc aat gtg agc tac tat	486			
Ala His Asp Tyr Ile Ser Trp Glu Ser Phe Ser Asn Val Ser Tyr Tyr				
135	140	145	150	
act cgc att ctg ccc tct gta ccc aaa gac tgc ccc aca ccc atg ggg	534			
Thr Arg Ile Leu Pro Ser Val Pro Lys Asp Cys Pro Thr Pro Met Gly				
155	160	165		
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Thr Lys Gly Lys Lys Gln Leu Pro Asp Val Gln Leu Leu Ala Gln Gln				
170	175	180		
ctg ctg ctg aga agg gag ttc att cct gcc ccc cag ggc acc aac atc	630			
Leu Leu Leu Arg Arg Glu Phe Ile Pro Ala Pro Gln Gly Thr Asn Ile				
185	190	195		
ctg ttt gcc ttc ttt gca caa cac ttc acc cac cag ttc ttc aag acc	678			
Leu Phe Ala Phe Phe Ala Gln His Phe Thr His Gln Phe Phe Lys Thr				
200	205	210		
tct gga aag atg ggt cct ggc ttt acc aag gcc tta ggc cac ggg gta	726			

Ser Gly Lys Met Gly Pro Gly Phe Thr Lys Ala Leu Gly His Gly Val
 215 220 225 230
 gac ctt ggc cac att tat gga gat aat ctg gaa cga cag tat cac ctg 774
 Asp Leu Gly His Ile Tyr Gly Asp Asn Leu Glu Arg Gln Tyr His Leu
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 cgg ctc ttc aag gat ggg aaa ctt aag tac cag gtg ctg gac gga gag 822
 Arg Leu Phe Lys Asp Gly Lys Leu Lys Tyr Gln Val Leu Asp Gly Glu
 250 255 260
 gtg tac cca cct tcc gtg gaa cag gcg tcc gtg ttg atg cgc tac cca 870
 Val Tyr Pro Pro Ser Val Glu Gln Ala Ser Val Leu Met Arg Tyr Pro
 265 270 275
 cca ggt gtc ccg cct gaa agg cag atg gct gtg ggc cag gag gtg ttt 918
 Pro Gly Val Pro Pro Glu Arg Gln Met Ala Val Gly Gln Glu Val Phe
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 ggg ttg ctt ccg ggg ctg atg ctc ttc tcc acg atc tgg ctt cgt gaa 966
 Gly Leu Leu Pro Gly Leu Met Leu Phe Ser Thr Ile Trp Leu Arg Glu
 295 300 305 310
 cat aac cgc gtg tgc gac ctg ctg aag gag gag cat ccc acg tgg gat 1014
 His Asn Arg Val Cys Asp Leu Leu Lys Glu Glu His Pro Thr Trp Asp
 315 320 325
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 Asp Glu Gln Leu Phe Gln Thr Thr Arg Leu Ile Leu Ile Gly Glu Thr
 330 335 340
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 345 350 355
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 Leu Gln Leu Lys Phe Asp Pro Glu Leu Leu Phe Arg Ala Gln Phe Gln
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 Gly Leu Leu Gly Asn Pro Ile Cys Ser Pro Glu Tyr Trp Lys Pro Ser
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 Thr Phe Gly Gly Asp Val Gly Phe Asn Leu Val Asn Thr Ala Ser Leu
 555 560 565
 aag aaa ctg gtc tgc ctc aac acc aag acc tgc ccc tat gtt tcc ttc 1782
 Lys Lys Leu Val Cys Leu Asn Thr Lys Thr Cys Pro Tyr Val Ser Phe
 570 575 580
 cgt gtg cca gat tac cct gga gat gac ggg tct gtc tta gtg aga cgc 1830
 Arg Val Pro Asp Tyr Pro Gly Asp Asp Gly Ser Val Leu Val Arg Arg
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 Ser Thr Glu Leu
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 cacatttgaa acttgggtc ttaccttgc ctagaaaatt gtgattttgc cactttcgga 2005
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<210> 849

<211> 602

<212> PRT

<213> Mus musculus

<400> 849

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 Ser Pro Val Asn Pro Cys Cys Tyr Tyr Pro Cys Gln Asn Gln Gly Val
 35 40 45
 Cys Val Arg Phe Gly Leu Asp Asn Tyr Gln Cys Asp Cys Thr Arg Thr
 50 55 60
 Gly Tyr Ser Gly Pro Asn Cys Thr Ile Pro Glu Ile Trp Thr Trp Leu
 65 70 75 80
 Arg Asn Ser Leu Arg Pro Ser Pro Ser Phe Thr His Phe Leu Leu Thr
 85 90 95
 His Gly Tyr Trp Leu Trp Glu Phe Val Asn Ala Thr Phe Ile Arg Glu
 100 105 110
 Val Leu Met Arg Leu Val Leu Thr Val Arg Ser Asn Leu Ile Pro Ser
 115 120 125
 Pro Pro Thr Tyr Asn Ser Ala His Asp Tyr Ile Ser Trp Glu Ser Phe
 130 135 140
 Ser Asn Val Ser Tyr Tyr Thr Arg Ile Leu Pro Ser Val Pro Lys Asp
 145 150 155 160

Cys Pro Thr Pro Met Gly Thr Lys Gly Lys Lys Gln Leu Pro Asp Val
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 His Gln Phe Phe Lys Thr Ser Gly Lys Met Gly Pro Gly Phe Thr Lys
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 225 230 235 240
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 245 250 255
 Gln Val Leu Asp Gly Glu Val Tyr Pro Pro Ser Val Glu Gln Ala Ser
 260 265 270
 Val Leu Met Arg Tyr Pro Pro Gly Val Pro Pro Glu Arg Gln Met Ala
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 Val Gly Gln Glu Val Phe Gly Leu Leu Pro Gly Leu Met Leu Phe Ser
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 His Leu Tyr His Trp His Pro Leu Met Pro Asn Ser Phe Gln Val Gly

385 390 395 400
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<210> 850

<211> 509

<212> DNA

<213> Mus musculus

<400> 850

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509

<210> 851

<211> 1941

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (161).. (643)

<400> 851

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ccggccgccg ctgcagtggc cgctccctgg gccgtaggaa atg agc gat aac gat 175

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Asp Ile Glu Val Glu Ser Asp Glu Glu Gln Ala Arg Phe Gln Ser Ala			
10	15	20	
gct gac aag cgg gct cac cat aat gca ctg gaa cga aaa cgt agg gac			271
Ala Asp Lys Arg Ala His His Asn Ala Leu Glu Arg Lys Arg Arg Asp			
25	30	35	
cac atc aaa gac agc ttt cac agt ttg cgg gac tca gtc cca tca ctc			319
His Ile Lys Asp Ser Phe His Ser Leu Arg Asp Ser Val Pro Ser Leu			
40	45	50	
caa gga gag aag gca tcc cgg gcc caa atc cta gac aaa gca aca gag			367
Gln Gly Glu Lys Ala Ser Arg Ala Gln Ile Leu Asp Lys Ala Thr Glu			
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Tyr Ile Gln Tyr Met Arg Arg Lys Asn Asp Thr His Gln Gln Asp Ile			
70	75	80	85
gat gac ctc aag cgg cag aat gct ctt ctg gag caa caa gtc cgt gca			463
Asp Asp Leu Lys Arg Gln Asn Ala Leu Leu Glu Gln Gln Val Arg Ala			
90	95	100	
ctg gag aag gca aga tca agt gcc caa ctg cag acc aac tac ccc tcc			511
Leu Glu Lys Ala Arg Ser Ser Ala Gln Leu Gln Thr Asn Tyr Pro Ser			
105	110	115	
tca gac aac agc ctc tac acc aac gcc aag ggc ggc acc atc tct gcc			559
Ser Asp Asn Ser Leu Tyr Thr Asn Ala Lys Gly Gly Thr Ile Ser Ala			
120	125	130	
ttc gat ggg ggt tca gac tcc agc tca gaa tcc gag cct gaa gag ccc			607
Phe Asp Gly Gly Ser Asp Ser Ser Ser Glu Ser Glu Pro Glu Glu Pro			
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Gln Ser Arg Lys Lys Leu Arg Met Glu Ala Ser

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<210> 852

<211> 160

<212> PRT

<213> Mus musculus

<400> 852

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35 40 45
Ser Val Pro Ser Leu Gln Gly Glu Lys Ala Ser Arg Ala Gln Ile Leu
50 55 60
Asp Lys Ala Thr Glu Tyr Ile Gln Tyr Met Arg Arg Lys Asn Asp Thr
65 70 75 80
His Gln Gln Asp Ile Asp Asp Leu Lys Arg Gln Asn Ala Leu Leu Glu
85 90 95
Gln Gln Val Arg Ala Leu Glu Lys Ala Arg Ser Ser Ala Gln Leu Gln
100 105 110
Thr Asn Tyr Pro Ser Ser Asp Asn Ser Leu Tyr Thr Asn Ala Lys Gly
115 120 125
Gly Thr Ile Ser Ala Phe Asp Gly Gly Ser Asp Ser Ser Ser Glu Ser
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<211> 2844

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<222> (230).. (1564)

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 gggcttcaga gccgccagcc tccgcacggt ttgcggtggt gaccggggcg cgactcgacg 180
 gcgctgctgc gggccttgic ttagtagggg gacccctcgg atctccacc atg gcg tcc 238

Met Ala Ser

1

acg aac acc aac ctg cag aaa gca ata gat ctt gca agc aaa gca gcc 286

Thr Asn Thr Asn Leu Gln Lys Ala Ile Asp Leu Ala Ser Lys Ala Ala

5

10

15

cag gaa gac aaa gct ggg aac tat gag gaa gct ctt caa ctc tac caa 334

Gln Glu Asp Lys Ala Gly Asn Tyr Glu Glu Ala Leu Gln Leu Tyr Gln

20

25

30

35

cat gct gtg cag tat ttt ctc cat gtt gtt aaa tat gaa gca caa ggt 382

His Ala Val Gln Tyr Phe Leu His Val Val Lys Tyr Glu Ala Gln Gly

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45

50

gat aaa gcc aag caa agt atc agg gcc aag tgt aca gaa tat ctc gat 430

Asp Lys Ala Lys Gln Ser Ile Arg Ala Lys Cys Thr Glu Tyr Leu Asp

55

60

65

aga gca gaa aaa cta aag gaa tat ctg aag aaa aag gag aag aaa cca 478

Arg Ala Glu Lys Leu Lys Glu Tyr Leu Lys Lys Lys Glu Lys Lys Pro

70

75

80

cag aag cct gtg aaa gag gca cag tca ggc cca gtt gat gag aag ggg 526

Gln Lys Pro Val Lys Glu Ala Gln Ser Gly Pro Val Asp Glu Lys Gly

85

90

95

aat gac agt gat ggg gaa gca gaa tct gat gat cct gaa aaa aag aaa 574

Asn Asp Ser Asp Gly Glu Ala Glu Ser Asp Asp Pro Glu Lys Lys Lys
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 ctg cag aat caa ctt caa ggt gcc att gtt ata gag cga cca aat gtg 622
 Leu Gln Asn Gln Leu Gln Gly Ala Ile Val Ile Glu Arg Pro Asn Val
 120 125 130
 aag tgg agt gat gtt gct ggt ctc gaa gga gcc aaa gaa gct ctt aaa 670
 Lys Trp Ser Asp Val Ala Gly Leu Glu Gly Ala Lys Glu Ala Leu Lys
 135 140 145
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 Glu Ala Val Ile Leu Pro Ile Lys Phe Pro His Leu Phe Thr Gly Lys
 150 155 160
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 Phe Phe Ser Ile Ser Ser Ser Asp Leu Val Ser Lys Trp Leu Gly Glu
 200 205 210
 agc gaa aaa ctg gtt aag aac tta ttc cag ctt gcc aga gag aac aag 910
 Ser Glu Lys Leu Val Lys Asn Leu Phe Gln Leu Ala Arg Glu Asn Lys
 215 220 225
 cct tct atc atc ttc atc gat gag att gat tct ctg tgt ggt tcc aga 958
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 260 265 270 275
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 Gly Ala Thr Asn Ile Pro Trp Val Leu Asp Ser Ala Ile Arg Arg Arg
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 Phe Glu Lys Arg Ile Tyr Ile Pro Leu Pro Glu Ala His Ala Arg Ala
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 gcc atg ttt aga ctg cac ttg ggc agc act cag aac agc ctc aca gaa 1198
 Ala Met Phe Arg Leu His Leu Gly Ser Thr Gln Asn Ser Leu Thr Glu
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 Ala Asp Phe Gln Glu Leu Gly Arg Lys Thr Asp Gly Tyr Ser Gly Val
 325 330 335
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 Val Gln Ser Ala Thr His Phe Lys Lys Val Arg Gly Pro Ser Arg Ala
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 gat cct aac tgc att gta aat gac ctg ctg aca ccc tgc tct ccg gga 1390
 Asp Pro Asn Cys Ile Val Asn Asp Leu Leu Thr Pro Cys Ser Pro Gly
 375 380 385
 gac cct ggg gct att gaa atg aca tgg atg gat gtt cct gga gat aaa 1438
 Asp Pro Gly Ala Ile Glu Met Thr Trp Met Asp Val Pro Gly Asp Lys
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 Leu Leu Glu Pro Val Val Ser Met Trp Asp Met Leu Arg Ser Leu Ser

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Ser Thr Lys Pro Thr Val Asn Glu Gln Asp Leu Leu Lys Leu Lys Lys			
420	425	430	435
ttt aca gaa gat ttt ggc cag gaa ggc taa cacaagaca gcaagaacat			1584
Phe Thr Glu Asp Phe Gly Gln Glu Gly			
440	445		
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tacatgctat gctatatgat tgcctttggg ttttgtgtac agactatatt tttgatatt			2784
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<210> 854

<211> 444

<212> PRT

<213> Mus musculus

<400> 854

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Leu Tyr Gln His Ala Val Gln Tyr Phe Leu His Val Val Lys Tyr Glu
      35              40              45
Ala Gln Gly Asp Lys Ala Lys Gln Ser Ile Arg Ala Lys Cys Thr Glu
      50              55              60
Tyr Leu Asp Arg Ala Glu Lys Leu Lys Glu Tyr Leu Lys Lys Lys Glu
      65              70              75              80
Lys Lys Pro Gln Lys Pro Val Lys Glu Ala Gln Ser Gly Pro Val Asp
      85              90              95
Glu Lys Gly Asn Asp Ser Asp Gly Glu Ala Glu Ser Asp Asp Pro Glu
      100              105              110
Lys Lys Lys Leu Gln Asn Gln Leu Gln Gly Ala Ile Val Ile Glu Arg
      115              120              125
Pro Asn Val Lys Trp Ser Asp Val Ala Gly Leu Glu Gly Ala Lys Glu
      130              135              140
Ala Leu Lys Glu Ala Val Ile Leu Pro Ile Lys Phe Pro His Leu Phe
      145              150              155              160
Thr Gly Lys Arg Thr Pro Trp Arg Gly Ile Leu Leu Phe Gly Pro Pro
      165              170              175
Gly Thr Gly Lys Ser Tyr Leu Ala Lys Ala Val Ala Thr Glu Ala Asn

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180	185	190
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210	215	220
Glu Asn Lys Pro Ser Ile Ile Phe Ile Asp Glu Ile Asp Ser Leu Cys		
225	230	235
240		
Gly Ser Arg Ser Glu Asn Glu Ser Glu Ala Ala Arg Arg Ile Lys Thr		
245	250	255
Glu Phe Leu Val Gln Met Gln Gly Val Gly Val Asp Asn Asp Gly Ile		
260	265	270
Leu Val Leu Gly Ala Thr Asn Ile Pro Trp Val Leu Asp Ser Ala Ile		
275	280	285
Arg Arg Arg Phe Glu Lys Arg Ile Tyr Ile Pro Leu Pro Glu Ala His		
290	295	300
Ala Arg Ala Ala Met Phe Arg Leu His Leu Gly Ser Thr Gln Asn Ser		
305	310	315
320		
Leu Thr Glu Ala Asp Phe Gln Glu Leu Gly Arg Lys Thr Asp Gly Tyr		
325	330	335
Ser Gly Val Asp Ile Ser Ile Ile Val Arg Asp Ala Leu Met Gln Pro		
340	345	350
Val Arg Lys Val Gln Ser Ala Thr His Phe Lys Lys Val Arg Gly Pro		
355	360	365
Ser Arg Ala Asp Pro Asn Cys Ile Val Asn Asp Leu Leu Thr Pro Cys		
370	375	380
Ser Pro Gly Asp Pro Gly Ala Ile Glu Met Thr Trp Met Asp Val Pro		
385	390	395
400		
Gly Asp Lys Leu Leu Glu Pro Val Val Ser Met Trp Asp Met Leu Arg		
405	410	415

Ser Leu Ser Ser Thr Lys Pro Thr Val Asn Glu Gln Asp Leu Leu Lys

420

425

430

Leu Lys Lys Phe Thr Glu Asp Phe Gly Gln Glu Gly

435

440

<210> 855

<211> 1509

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (31)..(1368)

<400> 855

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5

cgc atc gcg cat ttt ctg gat cgg cac ctg gtc ttt ccg ctt ctt gag 102

Arg Ile Ala His Phe Leu Asp Arg His Leu Val Phe Pro Leu Leu Glu

10

15

20

ttt ctc tct gtg aaa gag att tat aat gaa aaa gaa tta tta caa gga 150

Phe Leu Ser Val Lys Glu Ile Tyr Asn Glu Lys Glu Leu Leu Gln Gly

25

30

35

40

aaa tta gat ctt ctt agt gat acc aat atg gtg gac ttt gct atg gat 198

Lys Leu Asp Leu Leu Ser Asp Thr Asn Met Val Asp Phe Ala Met Asp

45

50

55

gtt tac aaa aac ctt tat tct gat gat atc cct cat gct ttg aga gaa 246

Val Tyr Lys Asn Leu Tyr Ser Asp Asp Ile Pro His Ala Leu Arg Glu

60	65	70	
aaa aga acc aca gtt gtt gcg cag ctg aaa cag ctc cag gca gaa aca	294		
Lys Arg Thr Thr Val Val Ala Gln Leu Lys Gln Leu Gln Ala Glu Thr			
75	80	85	
gaa cca att gig aag atg ttt gaa gat cca gaa act aca agg cag atg	342		
Glu Pro Ile Val Lys Met Phe Glu Asp Pro Glu Thr Thr Arg Gln Met			
90	95	100	
cag tca acc agg gat ggc agg atg tta ttt gac tac ctg gca gac aaa	390		
Gln Ser Thr Arg Asp Gly Arg Met Leu Phe Asp Tyr Leu Ala Asp Lys			
105	110	115	120
cat ggg ttt agg caa gag tac tta gat aca ctc tac aga tac gca aaa	438		
His Gly Phe Arg Gln Glu Tyr Leu Asp Thr Leu Tyr Arg Tyr Ala Lys			
125	130	135	
ttc cag tat gag tgt gga aat tac tct gga gct gca gag tat ctt tac	486		
Phe Gln Tyr Glu Cys Gly Asn Tyr Ser Gly Ala Ala Glu Tyr Leu Tyr			
140	145	150	
ttc ttt aga gtt ttg gtc cca gca aca gat aga aat gct tta agt tcg	534		
Phe Phe Arg Val Leu Val Pro Ala Thr Asp Arg Asn Ala Leu Ser Ser			
155	160	165	
ctc tgg gga aaa ctg gcc tct gaa atc tta atg cag aat tgg gat gca	582		
Leu Trp Gly Lys Leu Ala Ser Glu Ile Leu Met Gln Asn Trp Asp Ala			
170	175	180	
gcc atg gaa gac ctt act cga tta aaa gaa acc ata gac aat aat tct	630		
Ala Met Glu Asp Leu Thr Arg Leu Lys Glu Thr Ile Asp Asn Asn Ser			
185	190	195	200
gtg agt tct cca ctc cag tct ctt cag cag cga aca tgg ctc att cat	678		
Val Ser Ser Pro Leu Gln Ser Leu Gln Gln Arg Thr Trp Leu Ile His			
205	210	215	
tgg tct cta ttt gtt ttt ttc aac cat cca aag ggc cgt gat aac att	726		

Trp Ser Leu Phe Val Phe Phe Asn His Pro Lys Gly Arg Asp Asn Ile
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 Ile Asp Leu Phe Leu Tyr Gln Pro Gln Tyr Leu Asn Ala Ile Gln Thr
 235 240 245
 atg tgt cca cat att cta cgc tat ttg act act gcc gtc ata acc aac 822
 Met Cys Pro His Ile Leu Arg Tyr Leu Thr Thr Ala Val Ile Thr Asn
 250 255 260
 aaa gat gtg cgg aaa cgc cgg cag gtg ctg aaa gat ctg gtg aaa gtg 870
 Lys Asp Val Arg Lys Arg Arg Gln Val Leu Lys Asp Leu Val Lys Val
 265 270 275 280
 att caa cag gag tct tac aca tat aaa gac cca att aca gaa ttt gtt 918
 Ile Gln Gln Glu Ser Tyr Thr Tyr Lys Asp Pro Ile Thr Glu Phe Val
 285 290 295
 gaa tgc cta tat gtt aac ttt gat ttt gac ggg gct cag aaa aag ctg 966
 Glu Cys Leu Tyr Val Asn Phe Asp Phe Asp Gly Ala Gln Lys Lys Leu
 300 305 310
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 Arg Glu Cys Glu Ser Val Leu Val Asn Asp Phe Phe Leu Val Ala Cys
 315 320 325
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 Leu Glu Asp Phe Ile Glu Asn Ala Arg Leu Phe Ile Phe Glu Thr Phe
 330 335 340
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 Cys Arg Ile His Gln Cys Ile Ser Ile Asn Met Leu Ala Asp Lys Leu
 345 350 355 360
 aat atg act cca gaa gaa gct gaa aga tgg att gtg aat ttg att aga 1158
 Asn Met Thr Pro Glu Glu Ala Glu Arg Trp Ile Val Asn Leu Ile Arg
 365 370 375

aat gcg agg ttg gat gcc aag att gat tct aaa cta ggt cat gtg gta 1206
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380

385

390

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395

400

405

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410

415

420

aaa ctt aat cag aac agt aga tca gag gct ccc aac tgg gca acc caa 1350
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425

430

435

440

gac tct ggc ttc tat taa aggattataa agaaaagaag aaaaaggaat 1398
 Asp Ser Gly Phe Tyr

445

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<210> 856

<211> 445

<212> PRT

<213> Mus musculus

<400> 856

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His Leu Val Phe Pro Leu Leu Glu Phe Leu Ser Val Lys Glu Ile Tyr

20

25

30

Asn Glu Lys Glu Leu Leu Gln Gly Lys Leu Asp Leu Leu Ser Asp Thr

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Asp Ile Pro His Ala Leu Arg Glu Lys Arg Thr Thr Val Val Ala Gln		
65	70	75
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Leu Lys Gln Leu Gln Ala Glu Thr Glu Pro Ile Val Lys Met Phe Glu		
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Asp Pro Glu Thr Thr Arg Gln Met Gln Ser Thr Arg Asp Gly Arg Met		
100	105	110
Leu Phe Asp Tyr Leu Ala Asp Lys His Gly Phe Arg Gln Glu Tyr Leu		
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Asp Thr Leu Tyr Arg Tyr Ala Lys Phe Gln Tyr Glu Cys Gly Asn Tyr		
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Ser Gly Ala Ala Glu Tyr Leu Tyr Phe Phe Arg Val Leu Val Pro Ala		
145	150	155
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Thr Asp Arg Asn Ala Leu Ser Ser Leu Trp Gly Lys Leu Ala Ser Glu		
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Ile Leu Met Gln Asn Trp Asp Ala Ala Met Glu Asp Leu Thr Arg Leu		
180	185	190
Lys Glu Thr Ile Asp Asn Asn Ser Val Ser Ser Pro Leu Gln Ser Leu		
195	200	205
Gln Gln Arg Thr Trp Leu Ile His Trp Ser Leu Phe Val Phe Phe Asn		
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His Pro Lys Gly Arg Asp Asn Ile Ile Asp Leu Phe Leu Tyr Gln Pro		
225	230	235
240		
Gln Tyr Leu Asn Ala Ile Gln Thr Met Cys Pro His Ile Leu Arg Tyr		
245	250	255
Leu Thr Thr Ala Val Ile Thr Asn Lys Asp Val Arg Lys Arg Arg Gln		
260	265	270

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 275 280 285
 Lys Asp Pro Ile Thr Glu Phe Val Glu Cys Leu Tyr Val Asn Phe Asp
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 Arg Leu Phe Ile Phe Glu Thr Phe Cys Arg Ile His Gln Cys Ile Ser
 340 345 350
 Ile Asn Met Leu Ala Asp Lys Leu Asn Met Thr Pro Glu Glu Ala Glu
 355 360 365
 Arg Trp Ile Val Asn Leu Ile Arg Asn Ala Arg Leu Asp Ala Lys Ile
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<211> 2769

<212> DNA

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<220>

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<222> (385).. (2769)

<400> 857

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Leu Phe Leu Lys Cys Gly Gly Ile Asp Glu Met Gln Ser Ser Arg Ala
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                30             35             40

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Leu Gln Glu Ser Val Leu Gln Asp Arg Ser Leu Pro His Gln Glu Ile
                45             50             55

ctt gct gca gac gaa gtg tta caa gag agt gaa atg aga caa cag gat 603
Leu Ala Ala Asp Glu Val Leu Gln Glu Ser Glu Met Arg Gln Gln Asp
                60             65             70

atg ata tcc cat gat gaa ctc atg gtc cac gag gag aca gtg aaa aat 651
Met Ile Ser His Asp Glu Leu Met Val His Glu Glu Thr Val Lys Asn
                75             80             85

gac gaa gag cag atg gac acc cac gag cgg ctt ccc caa gga ctg cag 699

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Asp	Glu	Glu	Gln	Met	Asp	Thr	His	Glu	Arg	Leu	Pro	Gln	Gly	Leu	Gln				
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tct	cac	gtt	tgt	gag	cac	tgc	aat	gct	gcc	ttt	aga	acg	aac	tat	cac	939			
Ser	His	Val	Cys	Glu	His	Cys	Asn	Ala	Ala	Phe	Arg	Thr	Asn	Tyr	His				
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tta	cag	agg	cat	gtc	ttc	att	cat	aca	ggc	gaa	aaa	ccg	ttt	caa	tgt	987			
Leu	Gln	Arg	His	Val	Phe	Ile	His	Thr	Gly	Glu	Lys	Pro	Phe	Gln	Cys				
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Arg Thr Asp Arg Val Leu Lys His Lys Arg Met Cys His Glu Asn His
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Asp Lys Lys Leu Asn Arg Cys Ala Ile Lys Gly Gly Leu Leu Thr Ser
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Lys Lys Lys Arg Gln Lys Thr Glu Lys Lys Ser Ser Gly Met Asp Lys
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Val His Ser Ser Thr Asn Tyr Asp Asp Ala Met Gln Phe Leu Lys Lys			
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Lys Arg Tyr Leu Gln Ala Ala Ser Asn Asn Ser Arg Glu Tyr Ala Leu			
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gcc agc gtc att gat gaa agc acc aca gca tcc ata ctg gat tcc cag	1947		
Ala Ser Val Ile Asp Glu Ser Thr Thr Ala Ser Ile Leu Asp Ser Gln			
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gca ctg aat gtg gag att aag agc aat cat gac aaa aat gtt atc cca	1995		
Ala Leu Asn Val Glu Ile Lys Ser Asn His Asp Lys Asn Val Ile Pro			
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Asp Glu Val Leu Gln Thr Leu Leu Asp His Tyr Ser His Lys Pro Asn			
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gga cag cat gag att tcc ttc agc gtt gca gat act gaa gtg act tct	2091		

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 Ser Ile Ser Ile Asn Ser Ser Asp Val Pro Glu Val Thr Gln Ser Glu
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Ile Gln Lys Tyr Leu Leu Gln Arg His Glu Lys Ile His Thr Gly Glu		
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Lys Pro Phe Arg Cys Asp Glu Cys Gly Met Arg Phe Ile Gln Lys Tyr		
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Cys Glu Tyr Cys Leu Gln Tyr Phe Ser Arg Thr Asp Arg Val Leu Lys		
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Phe Leu Asp Gln Val Thr Ser Gln Lys Lys Ala Glu Ala Gln Pro Val			
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His Gln Ala Tyr Gln Met Ser Ser Phe Glu Gln Pro Phe Arg Ala Pro			
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Gly	Pro	Val	His	Glu	Thr	Val	Tyr	Asp	Phe	Trp	Arg	Met	Val	Trp	Gln				
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gag	cag	tct	gcc	tgt	att	gtg	atg	gtc	act	aat	tta	gtg	gaa	gtt	ggc	4161			
Glu	Gln	Ser	Ala	Cys	Ile	Val	Met	Val	Thr	Asn	Leu	Val	Glu	Val	Gly				
				995				1000				1005							
cgg	gtg	aaa	tgc	tat	aaa	tat	tgg	cct	gat	gat	act	gag	gtt	tat	ggc	4209			
Arg	Val	Lys	Cys	Tyr	Lys	Tyr	Trp	Pro	Asp	Asp	Thr	Glu	Val	Tyr	Gly				
				1010				1015				1020				1025			

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 Asp Phe Lys Val Thr Cys Val Glu Met Glu Pro Leu Ala Glu Tyr Val
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 gtt agg aca ttc acc ttg gaa agg agg ggc tat aat gaa atc cgt gaa 4305
 Val Arg Thr Phe Thr Leu Glu Arg Arg Gly Tyr Asn Glu Ile Arg Glu
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 gtc aaa cag ttc cac ttc act ggc tgg cct gac cat ggt gtt cca tac 4353
 Val Lys Gln Phe His Phe Thr Gly Trp Pro Asp His Gly Val Pro Tyr
 1060 1065 1070
 cac gca aca ggg ctc ctg tca ttt atc cgg aga gtc aag cta tct aac 4401
 His Ala Thr Gly Leu Leu Ser Phe Ile Arg Arg Val Lys Leu Ser Asn
 1075 1080 1085
 cct ccc agt gct ggg ccc att gtc gta cac tgc agt gct ggt gct ggg 4449
 Pro Pro Ser Ala Gly Pro Ile Val Val His Cys Ser Ala Gly Ala Gly
 1090 1095 1100 1105
 cgc aca ggc tgt tac att gtt att gac ata atg ctg gac atg gct gaa 4497
 Arg Thr Gly Cys Tyr Ile Val Ile Asp Ile Met Leu Asp Met Ala Glu
 1110 1115 1120
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 Arg Glu Gly Val Val Asp Ile Tyr Asn Cys Val Lys Ala Leu Arg Ser
 1125 1130 1135
 cgg cgc att aat atg gta cag aca gag gaa cag tac att ttt att cat 4593
 Arg Arg Ile Asn Met Val Gln Thr Glu Glu Gln Tyr Ile Phe Ile His
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 gat gcc att tta gaa gcc tgc tta tgt gga gaa act gcc atc cct gtg 4641
 Asp Ala Ile Leu Glu Ala Cys Leu Cys Gly Glu Thr Ala Ile Pro Val
 1155 1160 1165
 tgt gaa ttt aaa gct gca tat ttt gat atg att cga ata gac tct cag 4689
 Cys Glu Phe Lys Ala Ala Tyr Phe Asp Met Ile Arg Ile Asp Ser Gln

1170	1175	1180	1185	
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Thr Asn Ser Ser His Leu Lys Asp Glu Phe Gln Thr Leu Asn Ser Val				
1190	1195	1200		
acc cct cga cta caa gct gaa gac tgc agc ata gcc tgc ctg cca agg	4785			
Thr Pro Arg Leu Gln Ala Glu Asp Cys Ser Ile Ala Cys Leu Pro Arg				
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aac cat gac aag aac cgt ttc atg gat atg ctc cca cct gac aga tgt	4833			
Asn His Asp Lys Asn Arg Phe Met Asp Met Leu Pro Pro Asp Arg Cys				
1220	1225	1230		
ctg cct ttt tta att aca att gat ggg gag agc agt aac tac atc aat	4881			
Leu Pro Phe Leu Ile Thr Ile Asp Gly Glu Ser Ser Asn Tyr Ile Asn				
1235	1240	1245		
gct gct ctt atg gat agc tat agg cag cca gca gct ttc atc gtc aca	4929			
Ala Ala Leu Met Asp Ser Tyr Arg Gln Pro Ala Ala Phe Ile Val Thr				
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caa tac cca ctg cca aac act gtg aaa gac ttc tgg aga tta gta tat	4977			
Gln Tyr Pro Leu Pro Asn Thr Val Lys Asp Phe Trp Arg Leu Val Tyr				
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gat tac gga tgt acc tcc atc gtg atg cta aat gaa gtg gac ctg tct	5025			
Asp Tyr Gly Cys Thr Ser Ile Val Met Leu Asn Glu Val Asp Leu Ser				
1285	1290	1295		
cag ggc tgc cca cag tac tgg cca gaa gaa gga atg ctg cga tat ggt	5073			
Gln Gly Cys Pro Gln Tyr Trp Pro Glu Glu Gly Met Leu Arg Tyr Gly				
1300	1305	1310		
cct atc caa gtg gaa tgt atg tct tgt tca atg gac tgt gat gtg atc	5121			
Pro Ile Gln Val Glu Cys Met Ser Cys Ser Met Asp Cys Asp Val Ile				
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Asn Arg Ile Phe Arg Ile Cys Asn Leu Thr Arg Pro Gln Glu Gly Tyr
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 Leu Met Val Gln Gln Phe Gln Tyr Leu Gly Trp Ala Ser His Arg Glu
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 gtg cct ggc tcc aaa cgc tcg ttt ttg aaa ttg ata ctg cag gtg gaa 5265
 Val Pro Gly Ser Lys Arg Ser Phe Leu Lys Leu Ile Leu Gln Val Glu
 1365 1370 1375
 aaa tgg caa gag gaa tgt gaa gaa ggg gaa ggc cgg aca atc atc cac 5313
 Lys Trp Gln Glu Glu Cys Glu Glu Gly Glu Gly Arg Thr Ile Ile His
 1380 1385 1390
 tgc ttg aat ggc ggt ggg cgc agt ggc atg ttc tgt gcc ata ggc att 5361
 Cys Leu Asn Gly Gly Gly Arg Ser Gly Met Phe Cys Ala Ile Gly Ile
 1395 1400 1405
 gtt gtg gag atg gtg aag cgg caa aat gtg gtg gat gtt ttc cat gca 5409
 Val Val Glu Met Val Lys Arg Gln Asn Val Val Asp Val Phe His Ala
 1410 1415 1420 1425
 gta aag acg ctg agg aac agc aag cca aac atg gtg gaa gcc ccg gag 5457
 Val Lys Thr Leu Arg Asn Ser Lys Pro Asn Met Val Glu Ala Pro Glu
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5896

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<211> 1457

<212> PRT

<213> Mus musculus

<400> 862

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 Gly Gly Cys Thr Phe Asp Asp Gly Pro Gly Ala Cys Asp Tyr His Gln
 35 40 45
 Asp Leu Tyr Asp Asp Phe Glu Trp Val His Val Ser Ala Gln Glu Pro
 50 55 60
 His Tyr Leu Pro Pro Glu Met Pro Gln Gly Ser Tyr Met Val Val Asp
 65 70 75 80
 Ser Ser Asn His Asp Pro Gly Glu Lys Ala Arg Leu Gln Leu Pro Thr
 85 90 95
 Met Lys Glu Asn Asp Thr His Cys Ile Asp Phe Ser Tyr Leu Leu Tyr
 100 105 110
 Ser Gln Lys Gly Leu Asn Pro Gly Thr Leu Asn Ile Leu Val Arg Val
 115 120 125
 Asn Lys Gly Pro Leu Ala Asn Pro Ile Trp Asn Val Thr Gly Phe Thr
 130 135 140
 Gly Arg Asp Trp Leu Arg Ala Glu Leu Ala Val Ser Thr Phe Trp Pro
 145 150 155 160
 Asn Glu Tyr Gln Val Ile Phe Glu Ala Glu Val Ser Gly Gly Arg Ser

	165		170		175
Gly Tyr Ile Ala Ile Asp Asp Ile Gln Val Leu Ser Tyr Pro Cys Asp					
	180		185		190
Lys Ser Pro His Phe Leu Arg Leu Gly Asp Val Glu Val Asn Ala Gly					
	195		200		205
Gln Asn Ala Thr Phe Gln Cys Ile Ala Thr Gly Arg Asp Ala Val His					
	210		215		220
Asn Lys Leu Trp Leu Gln Arg Arg Asn Gly Glu Asp Ile Pro Val Ala					
	225		230		235
Gln Thr Lys Asn Ile Asn His Arg Arg Phe Ala Ala Ser Phe Arg Leu					
	245		250		255
Gln Glu Val Thr Lys Thr Asp Gln Asp Leu Tyr Arg Cys Val Thr Gln					
	260		265		270
Ser Glu Arg Gly Ser Gly Val Ser Asn Phe Ala Gln Leu Ile Val Arg					
	275		280		285
Glu Pro Pro Arg Pro Ile Ala Pro Pro Gln Leu Leu Gly Val Gly Pro					
	290		295		300
Thr Tyr Leu Leu Ile Gln Leu Asn Ala Asn Ser Ile Ile Gly Asp Gly					
	305		310		315
Pro Ile Ile Leu Lys Glu Val Glu Tyr Arg Met Thr Ser Gly Ser Trp					
	325		330		335
Thr Glu Thr His Ala Val Asn Ala Pro Thr Tyr Lys Leu Trp His Leu					
	340		345		350
Asp Pro Asp Thr Glu Tyr Glu Ile Arg Val Leu Leu Thr Arg Pro Gly					
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Glu Gly Gly Thr Gly Leu Pro Gly Pro Pro Leu Ile Thr Arg Thr Lys					
	370		375		380
Cys Ala Glu Pro Met Arg Thr Pro Lys Thr Leu Lys Ile Ala Glu Ile					
	385		390		395
					400

Gln Ala Arg Arg Ile Ala Val Asp Trp Glu Ser Leu Gly Tyr Asn Ile
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 Thr Arg Cys His Thr Phe Asn Val Thr Ile Cys Tyr His Tyr Phe Arg
 420 425 430
 Gly His Asn Glu Ser Arg Ala Asp Cys Leu Asp Met Asp Pro Lys Ala
 435 440 445
 Pro Gln His Val Val Asn His Leu Pro Pro Tyr Thr Asn Val Ser Leu
 450 455 460
 Lys Met Ile Leu Thr Asn Pro Glu Gly Arg Lys Glu Ser Glu Glu Thr
 465 470 475 480
 Ile Ile Gln Thr Asp Glu Asp Val Pro Gly Pro Val Pro Val Lys Ser
 485 490 495
 Leu Gln Gly Thr Ser Phe Glu Asn Lys Ile Phe Leu Asn Trp Lys Glu
 500 505 510
 Pro Leu Glu Pro Asn Gly Ile Ile Thr Gln Tyr Glu Val Ser Tyr Ser
 515 520 525
 Ser Ile Arg Ser Phe Asp Pro Ala Val Pro Val Ala Gly Pro Pro Gln
 530 535 540
 Thr Val Ser Asn Leu Trp Asn Ser Thr His His Val Phe Met His Leu
 545 550 555 560
 His Pro Gly Thr Thr Tyr Gln Phe Phe Ile Arg Ala Ser Thr Val Lys
 565 570 575
 Gly Phe Gly Pro Ala Thr Ala Ile Asn Val Thr Thr Asn Ile Ser Ala
 580 585 590
 Pro Ser Leu Pro Asp Tyr Glu Gly Val Asp Ala Ser Leu Asn Glu Thr
 595 600 605
 Ala Thr Thr Ile Thr Val Leu Leu Arg Pro Ala Gln Ala Lys Gly Ala
 610 615 620
 Pro Ile Ser Ala Tyr Gln Ile Val Val Glu Gln Leu His Pro His Arg

625 630 635 640
 Thr Lys Arg Glu Ala Gly Ala Met Glu Cys Tyr Gln Val Pro Val Thr
 645 650 655
 Tyr Gln Asn Ala Leu Ser Gly Gly Ala Pro Tyr Tyr Phe Ala Ala Glu
 660 665 670
 Leu Pro Pro Gly Asn Leu Pro Glu Pro Ala Pro Phe Thr Val Gly Asp
 675 680 685
 Asn Arg Thr Tyr Lys Gly Phe Trp Asn Pro Pro Leu Ala Pro Arg Lys
 690 695 700
 Gly Tyr Asn Ile Tyr Phe Gln Ala Met Ser Ser Val Glu Lys Glu Thr
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 Lys Thr Gln Cys Val Arg Ile Ala Thr Lys Ala Ala Ala Thr Glu Glu
 725 730 735
 Pro Glu Val Ile Pro Asp Pro Ala Lys Gln Thr Asp Arg Val Val Lys
 740 745 750
 Ile Ala Gly Ile Ser Ala Gly Ile Leu Val Phe Ile Leu Leu Leu Leu
 755 760 765
 Val Val Ile Val Ile Val Lys Lys Ser Lys Leu Ala Lys Lys Arg Lys
 770 775 780
 Asp Ala Met Gly Asn Thr Arg Gln Glu Met Thr His Met Val Asn Ala
 785 790 795 800
 Met Asp Arg Ser Tyr Ala Asp Gln Ser Thr Leu His Ala Glu Asp Pro
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 Leu Ser Leu Thr Phe Met Asp Gln His Asn Phe Ser Pro Arg Leu Pro
 820 825 830
 Asn Asp Pro Leu Val Pro Thr Ala Val Leu Asp Glu Asn His Ser Ala
 835 840 845
 Thr Ala Glu Ser Ser Arg Leu Leu Asp Val Pro Arg Tyr Leu Cys Glu
 850 855 860

Gly Thr Glu Ser Pro Tyr Gln Thr Gly Gln Leu His Pro Ala Ile Arg
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 Val Ala Asp Leu Leu Gln His Ile Asn Leu Met Lys Thr Ser Asp Ser
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 Tyr Gly Phe Lys Glu Glu Tyr Glu Ser Phe Phe Glu Gly Gln Ser Ala
 900 905 910
 Ser Trp Asp Val Ala Lys Lys Asp Gln Asn Arg Ala Lys Asn Arg Tyr
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 Gly Asn Ile Ile Ala Tyr Asp His Ser Arg Val Ile Leu Gln Pro Val
 930 935 940
 Glu Asp Asp Pro Ser Ser Asp Tyr Ile Asn Ala Asn Tyr Ile Asp Ile
 945 950 955 960
 Trp Leu Tyr Arg Asp Gly Tyr Gln Arg Pro Ser His Tyr Ile Ala Thr
 965 970 975
 Gln Gly Pro Val His Glu Thr Val Tyr Asp Phe Trp Arg Met Val Trp
 980 985 990
 Gln Glu Gln Ser Ala Cys Ile Val Met Val Thr Asn Leu Val Glu Val
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 Val Val Arg Thr Phe Thr Leu Glu Arg Arg Gly Tyr Asn Glu Ile Arg
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 Glu Val Lys Gln Phe His Phe Thr Gly Trp Pro Asp His Gly Val Pro
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 Tyr His Ala Thr Gly Leu Leu Ser Phe Ile Arg Arg Val Lys Leu Ser
 1075 1080 1085
 Asn Pro Pro Ser Ala Gly Pro Ile Val Val His Cys Ser Ala Gly Ala

1090	1095	1100
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Glu Arg Glu Gly Val Val Asp Ile Tyr Asn Cys Val Lys Ala Leu Arg		
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Ser Arg Arg Ile Asn Met Val Gln Thr Glu Glu Gln Tyr Ile Phe Ile		
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His Asp Ala Ile Leu Glu Ala Cys Leu Cys Gly Glu Thr Ala Ile Pro		
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Val Cys Glu Phe Lys Ala Ala Tyr Phe Asp Met Ile Arg Ile Asp Ser		
1170	1175	1180
Gln Thr Asn Ser Ser His Leu Lys Asp Glu Phe Gln Thr Leu Asn Ser		
185 1190	1195	1200
Val Thr Pro Arg Leu Gln Ala Glu Asp Cys Ser Ile Ala Cys Leu Pro		
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Arg Asn His Asp Lys Asn Arg Phe Met Asp Met Leu Pro Pro Asp Arg		
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Cys Leu Pro Phe Leu Ile Thr Ile Asp Gly Glu Ser Ser Asn Tyr Ile		
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Asn Ala Ala Leu Met Asp Ser Tyr Arg Gln Pro Ala Ala Phe Ile Val		
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Thr Gln Tyr Pro Leu Pro Asn Thr Val Lys Asp Phe Trp Arg Leu Val		
265 1270	1275	1280
Tyr Asp Tyr Gly Cys Thr Ser Ile Val Met Leu Asn Glu Val Asp Leu		
1285	1290	1295
Ser Gln Gly Cys Pro Gln Tyr Trp Pro Glu Glu Gly Met Leu Arg Tyr		
1300	1305	1310
Gly Pro Ile Gln Val Glu Cys Met Ser Cys Ser Met Asp Cys Asp Val		
1315	1320	1325

Ile Asn Arg Ile Phe Arg Ile Cys Asn Leu Thr Arg Pro Gln Glu Gly
 1330 1335 1340
 Tyr Leu Met Val Gln Gln Phe Gln Tyr Leu Gly Trp Ala Ser His Arg
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 Glu Val Pro Gly Ser Lys Arg Ser Phe Leu Lys Leu Ile Leu Gln Val
 1365 1370 1375
 Glu Lys Trp Gln Glu Glu Cys Glu Glu Gly Glu Gly Arg Thr Ile Ile
 1380 1385 1390
 His Cys Leu Asn Gly Gly Gly Arg Ser Gly Met Phe Cys Ala Ile Gly
 1395 1400 1405
 Ile Val Val Glu Met Val Lys Arg Gln Asn Val Val Asp Val Phe His
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 Ala Val Lys Thr Leu Arg Asn Ser Lys Pro Asn Met Val Glu Ala Pro
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 1445 1450 1455
 Ser

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<211> 521

<212> DNA

<213> Mus musculus

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 atgctgctat tataatgaag attgacaagg atgaacgcct ggtgggtgctg gatgaggagc 180
 tcgagggtgt ctctccagat gaacttaaag acgaactacc cgagcggcac gctncgcttc 240
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 aaccagctaa tccagactgc cgaacttaac aaggtaattg aaattagaaa cactggagat 420
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<220>

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<222> (292).. (3207)

<400> 864

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 gcccgccccg gccccgacct ggctcggtc ccgcccgtcc gcgcgcgtcc gcagcggagc 180
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 tcagagccct tctaactgga gtttgacggt cgtgagctgc gcattttcac c atg gca 297

Met Ala

1

gac gat gat ccc tac gga act ggg caa atg ttt cat ttg aac act gct 345
 Asp Asp Asp Pro Tyr Gly Thr Gly Gln Met Phe His Leu Asn Thr Ala

5

10

15

ttg act cac tca ata ttt aat gca gaa tta tat tca cca gaa ata cca 393
 Leu Thr His Ser Ile Phe Asn Ala Glu Leu Tyr Ser Pro Glu Ile Pro

20

25

30

ctg tca aca gat ggc cca tac ctt caa ata tta gag caa cca aaa cag 441

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Arg	Gly	Phe	Arg	Phe	Arg	Tyr	Val	Cys	Glu	Gly	Pro	Ser	His	Gly	Gly	
			55					60					65			
ctt	ccg	gga	gcc	tct	agt	gag	aag	aac	aag	aaa	tcc	tac	cca	cag	gtc	537
Leu	Pro	Gly	Ala	Ser	Ser	Glu	Lys	Asn	Lys	Lys	Ser	Tyr	Pro	Gln	Val	
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Lys	Ile	Cys	Asn	Tyr	Val	Gly	Pro	Ala	Lys	Val	Ile	Val	Gln	Leu	Val	
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Thr	Asn	Gly	Lys	Asn	Ile	His	Leu	His	Ala	His	Ser	Leu	Val	Gly	Lys	
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His	Cys	Glu	Asp	Gly	Val	Cys	Thr	Val	Thr	Ala	Gly	Pro	Lys	Asp	Met	
			115					120					125		130	
gtg	gtt	ggc	ttt	gca	aac	ctg	gga	ata	ctt	cat	gtg	act	aag	aaa	aag	729
Val	Val	Gly	Phe	Ala	Asn	Leu	Gly	Ile	Leu	His	Val	Thr	Lys	Lys	Lys	
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Val	Phe	Glu	Thr	Leu	Glu	Ala	Arg	Met	Thr	Glu	Ala	Cys	Ile	Arg	Gly	
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Tyr	Asn	Pro	Gly	Leu	Leu	Val	His	Ser	Asp	Leu	Ala	Tyr	Leu	Gln	Ala	
			165					170					175			
gaa	ggc	gga	gga	gac	cgg	caa	ctc	aca	gac	aga	gag	aag	gag	atc	atc	873
Glu	Gly	Gly	Gly	Asp	Arg	Gln	Leu	Thr	Asp	Arg	Glu	Lys	Glu	Ile	Ile	
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cgc ctc atg ttc aca gcc ttc ctc cct gac agc act ggc agc ttc act 969
Arg Leu Met Phe Thr Ala Phe Leu Pro Asp Ser Thr Gly Ser Phe Thr
          215          220          225
cgg aga ctg gag cct gtc gtc tca gac gcc atc tat gat agc aaa gcc 1017
Arg Arg Leu Glu Pro Val Val Ser Asp Ala Ile Tyr Asp Ser Lys Ala
          230          235          240
ccg aat gca tcc aac ctg aaa atc gtc aga atg gac aga aca gca gga 1065
Pro Asn Ala Ser Asn Leu Lys Ile Val Arg Met Asp Arg Thr Ala Gly
          245          250          255
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Cys Val Thr Gly Gly Glu Glu Ile Tyr Leu Leu Cys Asp Lys Val Gln
          260          265          270
aaa gat gac atc cag att cgg ttt tat gaa gag gaa gaa aat ggc gga 1161
Lys Asp Asp Ile Gln Ile Arg Phe Tyr Glu Glu Glu Glu Asn Gly Gly
275          280          285          290
gtt tgg gaa gga ttt ggc gac ttt tcc ccc acg gat gtt cat aga cag 1209
Val Trp Glu Gly Phe Gly Asp Phe Ser Pro Thr Asp Val His Arg Gln
          295          300          305
ttt gcc att gtc ttc aaa acg cca aag tat aag gat gtc aac att aca 1257
Phe Ala Ile Val Phe Lys Thr Pro Lys Tyr Lys Asp Val Asn Ile Thr
          310          315          320
aag cca gct tcc gtc ttt gtt cag ctt cgg agg aaa tca gac ctg gaa 1305
Lys Pro Ala Ser Val Phe Val Gln Leu Arg Arg Lys Ser Asp Leu Glu
          325          330          335
act agt gaa ccg aaa ccc ttt ctc tac tac cct gaa atc aaa gac aaa 1353
Thr Ser Glu Pro Lys Pro Phe Leu Tyr Tyr Pro Glu Ile Lys Asp Lys

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355	360	365	370
agc ttc ggc ggc ggc agt gga gcg gga gcc ggt ggt gga ggc atg ttc			1449
Ser Phe Gly Gly Gly Ser Gly Ala Gly Ala Gly Gly Gly Gly Met Phe			
	375	380	385
ggt agt ggc ggt ggc gga ggg agt acc gga agc cct ggc cca ggg tat			1497
Gly Ser Gly Gly Gly Gly Gly Ser Thr Gly Ser Pro Gly Pro Gly Tyr			
	390	395	400
ggc tac tcg aac tac gga ttt cct ccc tac ggt ggg att aca ttc cat			1545
Gly Tyr Ser Asn Tyr Gly Phe Pro Pro Tyr Gly Gly Ile Thr Phe His			
	405	410	415
ccc gga gtc acg aaa tcc aac gca ggg gtc acc cat ggc acc ata aac			1593
Pro Gly Val Thr Lys Ser Asn Ala Gly Val Thr His Gly Thr Ile Asn			
	420	425	430
acc aaa ttt aaa aat ggc cct aaa gat tgt gcc aag agt gat gac gag			1641
Thr Lys Phe Lys Asn Gly Pro Lys Asp Cys Ala Lys Ser Asp Asp Glu			
435	440	445	450
gag agt ctg act ctc cct gag aag gaa act gaa ggt gaa ggg ccc agc			1689
Glu Ser Leu Thr Leu Pro Glu Lys Glu Thr Glu Gly Glu Gly Pro Ser			
	455	460	465
ctg ccc atg gcc tgc acc aag acg gaa ccc atc gcc ttg gca tcc acc			1737
Leu Pro Met Ala Cys Thr Lys Thr Glu Pro Ile Ala Leu Ala Ser Thr			
	470	475	480
atg gaa gac aag gag cag gac atg gga ttt cag gat aac ctc ttt ctc			1785
Met Glu Asp Lys Glu Gln Asp Met Gly Phe Gln Asp Asn Leu Phe Leu			
	485	490	495
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Glu Lys Ala Leu Gln Leu Ala Arg Arg His Ala Asn Ala Leu Phe Asp
 500 505 510
 tac gca gtg acg ggg gat gtg aag atg ttg ctg gcc gtg caa cgc cat 1881
 Tyr Ala Val Thr Gly Asp Val Lys Met Leu Leu Ala Val Gln Arg His
 515 520 525 530
 ctc acc gcc gtg cag gat gag aat ggg gac agt gtc tta cac tta gcc 1929
 Leu Thr Ala Val Gln Asp Glu Asn Gly Asp Ser Val Leu His Leu Ala
 535 540 545
 atc atc cac ctc cac gct cag ctc gtg agg gat ctg ctg gaa gtc aca 1977
 Ile Ile His Leu His Ala Gln Leu Val Arg Asp Leu Leu Glu Val Thr
 550 555 560
 tct ggt ttg atc tct gat gac atc atc aac atg aga aat gac ctg tat 2025
 Ser Gly Leu Ile Ser Asp Asp Ile Ile Asn Met Arg Asn Asp Leu Tyr
 565 570 575
 cag aca cct ctg cac ttg gcc gtg atc acc aag cag gaa gat gta gta 2073
 Gln Thr Pro Leu His Leu Ala Val Ile Thr Lys Gln Glu Asp Val Val
 580 585 590
 gag gat ttg ctg agg gtt ggg gct gac ctg agc ctt ctg gac cgc tgg 2121
 Glu Asp Leu Leu Arg Val Gly Ala Asp Leu Ser Leu Leu Asp Arg Trp
 595 600 605 610
 ggc aac tct gtc ctg cac cta gct gcc aaa gaa gga cac gac aga atc 2169
 Gly Asn Ser Val Leu His Leu Ala Ala Lys Glu Gly His Asp Arg Ile
 615 620 625
 ctc agc atc ctg ctc aag agc aga aaa gca gcg ccc ctt atc gac cac 2217
 Leu Ser Ile Leu Leu Lys Ser Arg Lys Ala Ala Pro Leu Ile Asp His
 630 635 640
 ccc aat ggg gaa ggt cta aat gcc atc cac ata gct gtg atg agc aat 2265
 Pro Asn Gly Glu Gly Leu Asn Ala Ile His Ile Ala Val Met Ser Asn
 645 650 655

agc ctg cca tgt ctg ctg ctg ctg gtg gct gcc ggg gca gaa gtc aat 2313
 Ser Leu Pro Cys Leu Leu Leu Leu Val Ala Ala Gly Ala Glu Val Asn
 660 665 670
 gct cag gag cag aag tct ggg cgc acg ccg ctg cac ctg gcc gtg gag 2361
 Ala Gln Glu Gln Lys Ser Gly Arg Thr Pro Leu His Leu Ala Val Glu
 675 680 685 690
 tac gac aac atc tcc ttg gct ggc tgc ctg ctt ctg gag ggt gat gcc 2409
 Tyr Asp Asn Ile Ser Leu Ala Gly Cys Leu Leu Leu Glu Gly Asp Ala
 695 700 705
 cac gtg gac agt acc acc tat gat ggg act aca cct ctg cat ata gcg 2457
 His Val Asp Ser Thr Thr Tyr Asp Gly Thr Thr Pro Leu His Ile Ala
 710 715 720
 gcc gga aga ggg tcc acc aga ctg gca gct ctt ctc aaa gca gca gga 2505
 Ala Gly Arg Gly Ser Thr Arg Leu Ala Ala Leu Leu Lys Ala Ala Gly
 725 730 735
 gca gac ccc ctg gtg gag aac ttt gag cct ctc tat gac ctg gac gac 2553
 Ala Asp Pro Leu Val Glu Asn Phe Glu Pro Leu Tyr Asp Leu Asp Asp
 740 745 750
 tct tgg gag aag gct gga gaa gat gag gga gtg gtg cca ggt acc aca 2601
 Ser Trp Glu Lys Ala Gly Glu Asp Glu Gly Val Val Pro Gly Thr Thr
 755 760 765 770
 ccc ctg gac atg gct gcc aac tgg cag gta ttt gac ata cta aat ggg 2649
 Pro Leu Asp Met Ala Ala Asn Trp Gln Val Phe Asp Ile Leu Asn Gly
 775 780 785
 aaa ccg tat gag cct gtg ttc aca tct gat gat ata cta cca caa ggg 2697
 Lys Pro Tyr Glu Pro Val Phe Thr Ser Asp Asp Ile Leu Pro Gln Gly
 790 795 800
 gac atg aag cag ctg aca gaa gac acg agg cta caa ctc tgc aaa ctg 2745
 Asp Met Lys Gln Leu Thr Glu Asp Thr Arg Leu Gln Leu Cys Lys Leu

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ctg gaa att cct gat cca gac aaa aac tgg gcc act ctg gca cag aag	2793		
Leu Glu Ile Pro Asp Pro Asp Lys Asn Trp Ala Thr Leu Ala Gln Lys			
820	825	830	
ttg ggt ctg ggg ata ttg aac aat gcc ttc cgg ctg agt cct gct cct	2841		
Leu Gly Leu Gly Ile Leu Asn Asn Ala Phe Arg Leu Ser Pro Ala Pro			
835	840	845	850
tct aaa act ctc atg gac aac tat gag gtc tct ggg ggt acc atc aaa	2889		
Ser Lys Thr Leu Met Asp Asn Tyr Glu Val Ser Gly Gly Thr Ile Lys			
855	860	865	
gag ctg atg gag gcc ctg caa cag atg ggc tac aca gag gcc att gaa	2937		
Glu Leu Met Glu Ala Leu Gln Gln Met Gly Tyr Thr Glu Ala Ile Glu			
870	875	880	
gtg atc cag gca gcc ttc cgc acc ccg gca acc aca gcc tcc agc ccc	2985		
Val Ile Gln Ala Ala Phe Arg Thr Pro Ala Thr Thr Ala Ser Ser Pro			
885	890	895	
gtg acc act gct cag gtc cac tgt ctg cct ctc tcg tct tcc tcc acg	3033		
Val Thr Thr Ala Gln Val His Cys Leu Pro Leu Ser Ser Ser Ser Thr			
900	905	910	
agg cag cac ata gat gaa ctc cgg gat agt gac agc gtc tgt gac agt	3081		
Arg Gln His Ile Asp Glu Leu Arg Asp Ser Asp Ser Val Cys Asp Ser			
915	920	925	930
ggt gtg gag aca tcc ttc cgc aaa ctc agc ttt aca gag tct ctt act	3129		
Gly Val Glu Thr Ser Phe Arg Lys Leu Ser Phe Thr Glu Ser Leu Thr			
935	940	945	
gga gac agc cca ctg cta tct ctg aac aaa atg ccc cac ggt tat ggg	3177		
Gly Asp Ser Pro Leu Leu Ser Leu Asn Lys Met Pro His Gly Tyr Gly			
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cag gaa gga cct att gaa ggc aaa att tag cctgctggcc gttccccac	3227		

Gln Glu Gly Pro Ile Glu Gly Lys Ile

965

970

actgtgtaaa ccaaagccct gacagtcctat tgcctcgtcc caaaggagga aggcaaagcg 3287
aatccaaagg tgctggagaa tcgccggcct gcagggtcac tcgatttcatt tcaaggcctt 3347
ccgaatttgg cgtccttctt ggttctgaaa tgaaatgtag ttgccacgca cagacggigt 3407
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tttccccgtt ttatgcattt tacatttgta aatatgtttt ctaatcaata ctttaaaaga 3827
agaatgttga atttataaaa tgctattttac ttttttattt ataataaagt acagcacatg 3887
tgact 3892

<210> 865

<211> 971

<212> PRT

<213> Mus musculus

<400> 865

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Ile Pro Leu Ser Thr Asp Gly Pro Tyr Leu Gln Ile Leu Glu Gln Pro
35 40 45
Lys Gln Arg Gly Phe Arg Phe Arg Tyr Val Cys Glu Gly Pro Ser His
50 55 60

Gly Gly Leu Pro Gly Ala Ser Ser Glu Lys Asn Lys Lys Ser Tyr Pro
 65 70 75 80
 Gln Val Lys Ile Cys Asn Tyr Val Gly Pro Ala Lys Val Ile Val Gln
 85 90 95
 Leu Val Thr Asn Gly Lys Asn Ile His Leu His Ala His Ser Leu Val
 100 105 110
 Gly Lys His Cys Glu Asp Gly Val Cys Thr Val Thr Ala Gly Pro Lys
 115 120 125
 Asp Met Val Val Gly Phe Ala Asn Leu Gly Ile Leu His Val Thr Lys
 130 135 140
 Lys Lys Val Phe Glu Thr Leu Glu Ala Arg Met Thr Glu Ala Cys Ile
 145 150 155 160
 Arg Gly Tyr Asn Pro Gly Leu Leu Val His Ser Asp Leu Ala Tyr Leu
 165 170 175
 Gln Ala Glu Gly Gly Gly Asp Arg Gln Leu Thr Asp Arg Glu Lys Glu
 180 185 190
 Ile Ile Arg Gln Ala Ala Val Gln Gln Thr Lys Glu Met Asp Leu Ser
 195 200 205
 Val Val Arg Leu Met Phe Thr Ala Phe Leu Pro Asp Ser Thr Gly Ser
 210 215 220
 Phe Thr Arg Arg Leu Glu Pro Val Val Ser Asp Ala Ile Tyr Asp Ser
 225 230 235 240
 Lys Ala Pro Asn Ala Ser Asn Leu Lys Ile Val Arg Met Asp Arg Thr
 245 250 255
 Ala Gly Cys Val Thr Gly Gly Glu Glu Ile Tyr Leu Leu Cys Asp Lys
 260 265 270
 Val Gln Lys Asp Asp Ile Gln Ile Arg Phe Tyr Glu Glu Glu Glu Asn
 275 280 285
 Gly Gly Val Trp Glu Gly Phe Gly Asp Phe Ser Pro Thr Asp Val His

290	295	300	
Arg Gln Phe Ala Ile Val Phe Lys Thr Pro Lys Tyr Lys Asp Val Asn			
305	310	315	320
Ile Thr Lys Pro Ala Ser Val Phe Val Gln Leu Arg Arg Lys Ser Asp			
	325	330	335
Leu Glu Thr Ser Glu Pro Lys Pro Phe Leu Tyr Tyr Pro Glu Ile Lys			
	340	345	350
Asp Lys Glu Glu Val Gln Arg Lys Arg Gln Lys Leu Met Pro Asn Phe			
	355	360	365
Ser Asp Ser Phe Gly Gly Gly Ser Gly Ala Gly Ala Gly Gly Gly Gly			
370	375	380	
Met Phe Gly Ser Gly Gly Gly Gly Gly Ser Thr Gly Ser Pro Gly Pro			
385	390	395	400
Gly Tyr Gly Tyr Ser Asn Tyr Gly Phe Pro Pro Tyr Gly Gly Ile Thr			
	405	410	415
Phe His Pro Gly Val Thr Lys Ser Asn Ala Gly Val Thr His Gly Thr			
	420	425	430
Ile Asn Thr Lys Phe Lys Asn Gly Pro Lys Asp Cys Ala Lys Ser Asp			
	435	440	445
Asp Glu Glu Ser Leu Thr Leu Pro Glu Lys Glu Thr Glu Gly Glu Gly			
450	455	460	
Pro Ser Leu Pro Met Ala Cys Thr Lys Thr Glu Pro Ile Ala Leu Ala			
465	470	475	480
Ser Thr Met Glu Asp Lys Glu Gln Asp Met Gly Phe Gln Asp Asn Leu			
	485	490	495
Phe Leu Glu Lys Ala Leu Gln Leu Ala Arg Arg His Ala Asn Ala Leu			
	500	505	510
Phe Asp Tyr Ala Val Thr Gly Asp Val Lys Met Leu Leu Ala Val Gln			
515	520	525	

Arg His Leu Thr Ala Val Gln Asp Glu Asn Gly Asp Ser Val Leu His
 530 535 540
 Leu Ala Ile Ile His Leu His Ala Gln Leu Val Arg Asp Leu Leu Glu
 545 550 555 560
 Val Thr Ser Gly Leu Ile Ser Asp Asp Ile Ile Asn Met Arg Asn Asp
 565 570 575
 Leu Tyr Gln Thr Pro Leu His Leu Ala Val Ile Thr Lys Gln Glu Asp
 580 585 590
 Val Val Glu Asp Leu Leu Arg Val Gly Ala Asp Leu Ser Leu Leu Asp
 595 600 605
 Arg Trp Gly Asn Ser Val Leu His Leu Ala Ala Lys Glu Gly His Asp
 610 615 620
 Arg Ile Leu Ser Ile Leu Leu Lys Ser Arg Lys Ala Ala Pro Leu Ile
 625 630 635 640
 Asp His Pro Asn Gly Glu Gly Leu Asn Ala Ile His Ile Ala Val Met
 645 650 655
 Ser Asn Ser Leu Pro Cys Leu Leu Leu Leu Val Ala Ala Gly Ala Glu
 660 665 670
 Val Asn Ala Gln Glu Gln Lys Ser Gly Arg Thr Pro Leu His Leu Ala
 675 680 685
 Val Glu Tyr Asp Asn Ile Ser Leu Ala Gly Cys Leu Leu Leu Glu Gly
 690 695 700
 Asp Ala His Val Asp Ser Thr Thr Tyr Asp Gly Thr Thr Pro Leu His
 705 710 715 720
 Ile Ala Ala Gly Arg Gly Ser Thr Arg Leu Ala Ala Leu Leu Lys Ala
 725 730 735
 Ala Gly Ala Asp Pro Leu Val Glu Asn Phe Glu Pro Leu Tyr Asp Leu
 740 745 750
 Asp Asp Ser Trp Glu Lys Ala Gly Glu Asp Glu Gly Val Val Pro Gly

755	760	765
Thr Thr Pro Leu Asp Met Ala Ala Asn Trp Gln Val Phe Asp Ile Leu		
770	775	780
Asn Gly Lys Pro Tyr Glu Pro Val Phe Thr Ser Asp Asp Ile Leu Pro		
785	790	795
Gln Gly Asp Met Lys Gln Leu Thr Glu Asp Thr Arg Leu Gln Leu Cys		
805	810	815
Lys Leu Leu Glu Ile Pro Asp Pro Asp Lys Asn Trp Ala Thr Leu Ala		
820	825	830
Gln Lys Leu Gly Leu Gly Ile Leu Asn Asn Ala Phe Arg Leu Ser Pro		
835	840	845
Ala Pro Ser Lys Thr Leu Met Asp Asn Tyr Glu Val Ser Gly Gly Thr		
850	855	860
Ile Lys Glu Leu Met Glu Ala Leu Gln Gln Met Gly Tyr Thr Glu Ala		
865	870	875
Ile Glu Val Ile Gln Ala Ala Phe Arg Thr Pro Ala Thr Thr Ala Ser		
885	890	895
Ser Pro Val Thr Thr Ala Gln Val His Cys Leu Pro Leu Ser Ser Ser		
900	905	910
Ser Thr Arg Gln His Ile Asp Glu Leu Arg Asp Ser Asp Ser Val Cys		
915	920	925
Asp Ser Gly Val Glu Thr Ser Phe Arg Lys Leu Ser Phe Thr Glu Ser		
930	935	940
Leu Thr Gly Asp Ser Pro Leu Leu Ser Leu Asn Lys Met Pro His Gly		
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Tyr Gly Gln Glu Gly Pro Ile Glu Gly Lys Ile		
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<211> 2174

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (481).. (1881)

<400> 866

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gttcgggtga tcaccaggaa agcccctgaa aggcctagca ctccaatta gtaacaggac 180
tgtgcttgat accctacagc cctggaggaa ggctcgaggg gagctccctc cccaccccc 240
cttctcact tctttccggg tccccattgg ctggctcgct cggcggctag gatggcagtg 300
ggaggggacc ctctttccta acagtgttat aaaagcagcg cctttggcgt tgtccagtcc 360
tctgccactc ttgctccggg accccagaga cccagcgct cctacgattc acagccaccg 420
cgccctcatt ccttgtttgc agtttttcca gccgcagcaa gccagccac cttcgaagcc 480
atg tct acc agg tct gtg tcc tgc tcc tcc tac cgc agg atg ttc ggt 528
Met Ser Thr Arg Ser Val Ser Ser Ser Ser Tyr Arg Arg Met Phe Gly
      1              5              10              15
ggc tcc ggc aca tgc agc cgg ccc agc tcc aac cgg agc tat gtg acc 576
Gly Ser Gly Thr Ser Ser Arg Pro Ser Ser Asn Arg Ser Tyr Val Thr
              20              25              30
acg tcc aca cgc acc tac agt ctg ggc agc gca ctg cgc ccc agc act 624
Thr Ser Thr Arg Thr Tyr Ser Leu Gly Ser Ala Leu Arg Pro Ser Thr
              35              40              45
agc cgc agc ctg tat tcc tca tcc ccc ggt ggc gcc tat gtg acc cgg 672
Ser Arg Ser Leu Tyr Ser Ser Ser Pro Gly Gly Ala Tyr Val Thr Arg
              50              55              60

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tcc tcg gca gtg cgc ctg cgg agc agc gtg ccg ggc gtg cgg ctg ctt 720
Ser Ser Ala Val Arg Leu Arg Ser Ser Val Pro Gly Val Arg Leu Leu
65          70          75          80
caa gac tcg gtg gac ttc tcg ctg gcc gac gcc atc aac act gag ttc 768
Gln Asp Ser Val Asp Phe Ser Leu Ala Asp Ala Ile Asn Thr Glu Phe
85          90          95
aag aac acc cgc acc aac gag aag gta gaa ctg cag gag ctg aat gac 816
Lys Asn Thr Arg Thr Asn Glu Lys Val Glu Leu Gln Glu Leu Asn Asp
100         105         110
cgc ttt gcc aac tac atc gac aag gtg cgc ttc ctc gag cag cag aac 864
Arg Phe Ala Asn Tyr Ile Asp Lys Val Arg Phe Leu Glu Gln Gln Asn
115         120         125
aaa atc ctg ctg gct gag ctc gag cag ctc aag ggc cag ggc aag tcg 912
Lys Ile Leu Leu Ala Glu Leu Glu Gln Leu Lys Gly Gln Gly Lys Ser
130         135         140
cgc ctg ggc gac ctg tac gag gag gag atg cgg gag ctg cgc cgg cag 960
Arg Leu Gly Asp Leu Tyr Glu Glu Glu Met Arg Glu Leu Arg Arg Gln
145         150         155         160
gtg gat cag ctc acc aac gac aag gcc cgt gtc gag gtg gag cgg gac 1008
Val Asp Gln Leu Thr Asn Asp Lys Ala Arg Val Glu Val Glu Arg Asp
165         170         175
aac ctg gcc gag gac atc atg cgg ctg cga gag aaa ttg cag gag gag 1056
Asn Leu Ala Glu Asp Ile Met Arg Leu Arg Glu Lys Leu Gln Glu Glu
180         185         190
atg ctc cag aga gag gaa gcc gaa agc acc ctg cag tca ttc aga cag 1104
Met Leu Gln Arg Glu Glu Ala Glu Ser Thr Leu Gln Ser Phe Arg Gln
195         200         205
gat gtt gac aat gct tct ctg gca cgt ctt gac ctt gaa cgg aaa gtg 1152
Asp Val Asp Asn Ala Ser Leu Ala Arg Leu Asp Leu Glu Arg Lys Val

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210	215	220	
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Glu Ser Leu Gln Glu Glu Ile Ala Phe Leu Lys Lys Leu His Asp Glu			
225	230	235	240
gag atc cag gag ctg cag gcc cag att cag gaa cag cat gtc cag atc 1248			
Glu Ile Gln Glu Leu Gln Ala Gln Ile Gln Glu Gln His Val Gln Ile			
245	250	255	
gat gtg gac gtt tcc aag cct gac ctc act gct gcc ctg cgt gat gtg 1296			
Asp Val Asp Val Ser Lys Pro Asp Leu Thr Ala Ala Leu Arg Asp Val			
260	265	270	
cgc cag cag tat gaa agc gtg gct gcc aag aac ctc cag gag gcc gag 1344			
Arg Gln Gln Tyr Glu Ser Val Ala Ala Lys Asn Leu Gln Glu Ala Glu			
275	280	285	
gaa tgg tac aag tcc aag ttt gct gac ctc tct gag gct gcc aac cgg 1392			
Glu Trp Tyr Lys Ser Lys Phe Ala Asp Leu Ser Glu Ala Ala Asn Arg			
290	295	300	
aac aac gat gcc ctg cgc cag gcc aag cag gag tca aac gag tac cgg 1440			
Asn Asn Asp Ala Leu Arg Gln Ala Lys Gln Glu Ser Asn Glu Tyr Arg			
305	310	315	320
aga cag gtg cag tca ctc acc tgt gaa gtg gat gcc ctt aaa ggc act 1488			
Arg Gln Val Gln Ser Leu Thr Cys Glu Val Asp Ala Leu Lys Gly Thr			
325	330	335	
aac gag tcc ctg gag cgc cag atg cgt gag atg gaa gag aat ttt gcc 1536			
Asn Glu Ser Leu Glu Arg Gln Met Arg Glu Met Glu Glu Asn Phe Ala			
340	345	350	
ctt gaa gct gct aac tac cag gac act att ggc cgc ctg cag gat gag 1584			
Leu Glu Ala Ala Asn Tyr Gln Asp Thr Ile Gly Arg Leu Gln Asp Glu			
355	360	365	
atc caa aac atg aag gaa gag atg gct cgt cac ctt cgt gaa tac caa 1632			

Ile Gln Asn Met Lys Glu Glu Met Ala Arg His Leu Arg Glu Tyr Gln
 370 375 380
 gat ctg ctc aat gtt aag atg gcc ctg gac att gag atc gcc acc tac 1680
 Asp Leu Leu Asn Val Lys Met Ala Leu Asp Ile Glu Ile Ala Thr Tyr
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 Arg Lys Leu Leu Glu Gly Glu Glu Ser Arg Ile Ser Leu Pro Leu Pro
 405 410 415
 acc ttt tct tcc ctg aac ctg aga gaa act aac ctg gag tca ctt cct 1776
 Thr Phe Ser Ser Leu Asn Leu Arg Glu Thr Asn Leu Glu Ser Leu Pro
 420 425 430
 ctg gtt gac acc cac tca aaa aga aca ctc ctg att aag acg gtt gag 1824
 Leu Val Asp Thr His Ser Lys Arg Thr Leu Leu Ile Lys Thr Val Glu
 435 440 445
 acc aga gat gga cag gtg atc aat gag act tct cag cat cac gat gac 1872
 Thr Arg Asp Gly Gln Val Ile Asn Glu Thr Ser Gln His His Asp Asp
 450 455 460
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 Leu Glu
 465
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 caggagcgca agatagattt ggaatagaaa gaagctcagc acttaacaac tgacacccca 2041
 aaagcgtaga aaaggtttac aaaataatct agtttacgaa gaaatcttgt gctagaatac 2101
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<210> 867

<211> 466

<212> PRT

<213> Mus musculus

<400> 867

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 Ser Arg Ser Leu Tyr Ser Ser Ser Pro Gly Gly Ala Tyr Val Thr Arg
 50 55 60
 Ser Ser Ala Val Arg Leu Arg Ser Ser Val Pro Gly Val Arg Leu Leu
 65 70 75 80
 Gln Asp Ser Val Asp Phe Ser Leu Ala Asp Ala Ile Asn Thr Glu Phe
 85 90 95
 Lys Asn Thr Arg Thr Asn Glu Lys Val Glu Leu Gln Glu Leu Asn Asp
 100 105 110
 Arg Phe Ala Asn Tyr Ile Asp Lys Val Arg Phe Leu Glu Gln Gln Asn
 115 120 125
 Lys Ile Leu Leu Ala Glu Leu Glu Gln Leu Lys Gly Gln Gly Lys Ser
 130 135 140
 Arg Leu Gly Asp Leu Tyr Glu Glu Glu Met Arg Glu Leu Arg Arg Gln
 145 150 155 160
 Val Asp Gln Leu Thr Asn Asp Lys Ala Arg Val Glu Val Glu Arg Asp
 165 170 175
 Asn Leu Ala Glu Asp Ile Met Arg Leu Arg Glu Lys Leu Gln Glu Glu
 180 185 190
 Met Leu Gln Arg Glu Glu Ala Glu Ser Thr Leu Gln Ser Phe Arg Gln
 195 200 205

Asp Val Asp Asn Ala Ser Leu Ala Arg Leu Asp Leu Glu Arg Lys Val
 210 215 220
 Glu Ser Leu Gln Glu Glu Ile Ala Phe Leu Lys Lys Leu His Asp Glu
 225 230 235 240
 Glu Ile Gln Glu Leu Gln Ala Gln Ile Gln Glu Gln His Val Gln Ile
 245 250 255
 Asp Val Asp Val Ser Lys Pro Asp Leu Thr Ala Ala Leu Arg Asp Val
 260 265 270
 Arg Gln Gln Tyr Glu Ser Val Ala Ala Lys Asn Leu Gln Glu Ala Glu
 275 280 285
 Glu Trp Tyr Lys Ser Lys Phe Ala Asp Leu Ser Glu Ala Ala Asn Arg
 290 295 300
 Asn Asn Asp Ala Leu Arg Gln Ala Lys Gln Glu Ser Asn Glu Tyr Arg
 305 310 315 320
 Arg Gln Val Gln Ser Leu Thr Cys Glu Val Asp Ala Leu Lys Gly Thr
 325 330 335
 Asn Glu Ser Leu Glu Arg Gln Met Arg Glu Met Glu Glu Asn Phe Ala
 340 345 350
 Leu Glu Ala Ala Asn Tyr Gln Asp Thr Ile Gly Arg Leu Gln Asp Glu
 355 360 365
 Ile Gln Asn Met Lys Glu Glu Met Ala Arg His Leu Arg Glu Tyr Gln
 370 375 380
 Asp Leu Leu Asn Val Lys Met Ala Leu Asp Ile Glu Ile Ala Thr Tyr
 385 390 395 400
 Arg Lys Leu Leu Glu Gly Glu Glu Ser Arg Ile Ser Leu Pro Leu Pro
 405 410 415
 Thr Phe Ser Ser Leu Asn Leu Arg Glu Thr Asn Leu Glu Ser Leu Pro
 420 425 430
 Leu Val Asp Thr His Ser Lys Arg Thr Leu Leu Ile Lys Thr Val Glu

435 440 445
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 Leu Glu
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<210> 868

<211> 1722

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (60).. (1448)

<400> 868

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 Met Gly Lys Glu Lys Thr His Ile Asn Ile Val Val Ile Gly His Val
 1 5 10 15
 gat tcc ggc aag tcc acc aca acc ggc cac ctg atc tac aaa tgt ggc 155
 Asp Ser Gly Lys Ser Thr Thr Thr Gly His Leu Ile Tyr Lys Cys Gly
 20 25 30
 gga atc gac aag cga acc atc gaa aag ttt gag aag gag gct gct gag 203
 Gly Ile Asp Lys Arg Thr Ile Glu Lys Phe Glu Lys Glu Ala Ala Glu
 35 40 45
 atg gga aag ggc tcc ttc aag tac gcc tgg gtc tta gac aaa ctg aaa 251
 Met Gly Lys Gly Ser Phe Lys Tyr Ala Trp Val Leu Asp Lys Leu Lys
 50 55 60

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 Ala Glu Arg Glu Arg Gly Ile Thr Ile Asp Ile Ser Leu Trp Lys Phe
 65 70 75 80
 gag acc agc aaa tac tat gtg acc atc att gat gcc cca gga cac aga 347
 Glu Thr Ser Lys Tyr Tyr Val Thr Ile Ile Asp Ala Pro Gly His Arg
 85 90 95
 gac ttc atc aaa aac atg att aca ggc aca tcc cag gct gac tgt gct 395
 Asp Phe Ile Lys Asn Met Ile Thr Gly Thr Ser Gln Ala Asp Cys Ala
 100 105 110
 gtc ctg att gtt gct gct ggt gtt ggt gaa ttt gaa gct ggt atc tcc 443
 Val Leu Ile Val Ala Ala Gly Val Gly Glu Phe Glu Ala Gly Ile Ser
 115 120 125
 aag aac ggg cag acc cgc gag cat gct ctt ctg gct tac acc ctg ggt 491
 Lys Asn Gly Gln Thr Arg Glu His Ala Leu Leu Ala Tyr Thr Leu Gly
 130 135 140
 gtg aaa cag ctg att gtt ggt gtc aac aaa atg gat tcc acc gag cca 539
 Val Lys Gln Leu Ile Val Gly Val Asn Lys Met Asp Ser Thr Glu Pro
 145 150 155 160
 cca tac agt cag aag aga tac gag gaa atc gtt aag gaa gtc agc acc 587
 Pro Tyr Ser Gln Lys Arg Tyr Glu Glu Ile Val Lys Glu Val Ser Thr
 165 170 175
 tac att aag aaa att ggc tac aac cct gac aca gta gca ttt gtg cca 635
 Tyr Ile Lys Lys Ile Gly Tyr Asn Pro Asp Thr Val Ala Phe Val Pro
 180 185 190
 att tct ggt tgg aat gga gac aac atg ctg gag cca agt gct aat atg 683
 Ile Ser Gly Trp Asn Gly Asp Asn Met Leu Glu Pro Ser Ala Asn Met
 195 200 205
 cct tgg ttc aag gga tgg aaa gtc acg cgc aaa gat ggg cat gcc agt 731
 Pro Trp Phe Lys Gly Trp Lys Val Thr Arg Lys Asp Gly His Ala Ser

210	215	220	
ggc acc acg ctg ctg gaa gct ttg gat tgt atc cta cca cca act cgt	779		
Gly Thr Thr Leu Leu Glu Ala Leu Asp Cys Ile Leu Pro Pro Thr Arg			
225	230	235	240
cca act gac aag ccc ctg cga ctg ccc ctc cag gat gtc tat aaa att	827		
Pro Thr Asp Lys Pro Leu Arg Leu Pro Leu Gln Asp Val Tyr Lys Ile			
245	250	255	
gga ggc att ggc act gtc cct gtg ggc cga gtg gag act ggt gtt ctc	875		
Gly Gly Ile Gly Thr Val Pro Val Gly Arg Val Glu Thr Gly Val Leu			
260	265	270	
aag cct ggc atg gtg gtt acc ttt gct cca gtc aat gta aca act gaa	923		
Lys Pro Gly Met Val Val Thr Phe Ala Pro Val Asn Val Thr Thr Glu			
275	280	285	
gtc aag tct gtt gaa atg cat cat gaa gct ttg agt gaa gct ctt cct	971		
Val Lys Ser Val Glu Met His His Glu Ala Leu Ser Glu Ala Leu Pro			
290	295	300	
ggg gac aat gtg ggc ttc aat gta aag aac gtg tcg gtc aaa gat gtt	1019		
Gly Asp Asn Val Gly Phe Asn Val Lys Asn Val Ser Val Lys Asp Val			
305	310	315	320
aga cga ggc aat gtt gct ggt gac agc aaa aac gac cca cca atg gaa	1067		
Arg Arg Gly Asn Val Ala Gly Asp Ser Lys Asn Asp Pro Pro Met Glu			
325	330	335	
gca gct ggc ttc act gct cag gtg att atc ctg aac cat cca ggc caa	1115		
Ala Ala Gly Phe Thr Ala Gln Val Ile Ile Leu Asn His Pro Gly Gln			
340	345	350	
atc agt gct ggc tac gct cct gtt ctg gat tgt cac aca gcc cac ata	1163		
Ile Ser Ala Gly Tyr Ala Pro Val Leu Asp Cys His Thr Ala His Ile			
355	360	365	
gca tgc aag ttt gct gag ctt aaa gaa aag atc gat cgt cgt tct ggt	1211		

Ala Cys Lys Phe Ala Glu Leu Lys Glu Lys Ile Asp Arg Arg Ser Gly
 370 375 380
 aag aag ctg gaa gat ggc ccc aag ttc ctg aag tct ggc gat gct gcc 1259
 Lys Lys Leu Glu Asp Gly Pro Lys Phe Leu Lys Ser Gly Asp Ala Ala
 385 390 395 400
 att gtt gat atg gtc cct ggc aag ccc atg tgt gtt gag agc ttc tct 1307
 Ile Val Asp Met Val Pro Gly Lys Pro Met Cys Val Glu Ser Phe Ser
 405 410 415
 gac tac cct cca ctt ggt cgc ttt gct gtt cgc gac atg agg cag aca 1355
 Asp Tyr Pro Pro Leu Gly Arg Phe Ala Val Arg Asp Met Arg Gln Thr
 420 425 430
 gtt gct gtg ggt gtc atc aaa gct gtg gac aag aag gct gct gga gct 1403
 Val Ala Val Gly Val Ile Lys Ala Val Asp Lys Lys Ala Ala Gly Ala
 435 440 445
 ggc aaa gtc acc aag tct gcc cag aaa gct cag aag gct aaa tga 1448
 Gly Lys Val Thr Lys Ser Ala Gln Lys Ala Gln Lys Ala Lys
 450 455 460
 atattacccc taacacctgc caccacagtc ttaatcagtg gtggaagaac ggtctcagaa 1508
 ctgtttgtct caattggcca ttaagtitta atagtaaaac actggttaat gataacaatg 1568
 catcgtaaaa ccttcagaag gaaagaatgt tgtggacat tttttttgtg tgtggcagtt 1628
 ttaagttatt agttttcaaa atcagttact tttaatggaa acaacttgac caaaatctgt 1688
 cacagatttt gagaccatta aacaaggitt aatg 1722

<210> 869

<211> 462

<212> PRT

<213> Mus musculus

<400> 869

Met Gly Lys Glu Lys Thr His Ile Asn Ile Val Val Ile Gly His Val
 1 5 10 15
 Asp Ser Gly Lys Ser Thr Thr Thr Gly His Leu Ile Tyr Lys Cys Gly
 20 25 30
 Gly Ile Asp Lys Arg Thr Ile Glu Lys Phe Glu Lys Glu Ala Ala Glu
 35 40 45
 Met Gly Lys Gly Ser Phe Lys Tyr Ala Trp Val Leu Asp Lys Leu Lys
 50 55 60
 Ala Glu Arg Glu Arg Gly Ile Thr Ile Asp Ile Ser Leu Trp Lys Phe
 65 70 75 80
 Glu Thr Ser Lys Tyr Tyr Val Thr Ile Ile Asp Ala Pro Gly His Arg
 85 90 95
 Asp Phe Ile Lys Asn Met Ile Thr Gly Thr Ser Gln Ala Asp Cys Ala
 100 105 110
 Val Leu Ile Val Ala Ala Gly Val Gly Glu Phe Glu Ala Gly Ile Ser
 115 120 125
 Lys Asn Gly Gln Thr Arg Glu His Ala Leu Leu Ala Tyr Thr Leu Gly
 130 135 140
 Val Lys Gln Leu Ile Val Gly Val Asn Lys Met Asp Ser Thr Glu Pro
 145 150 155 160
 Pro Tyr Ser Gln Lys Arg Tyr Glu Glu Ile Val Lys Glu Val Ser Thr
 165 170 175
 Tyr Ile Lys Lys Ile Gly Tyr Asn Pro Asp Thr Val Ala Phe Val Pro
 180 185 190
 Ile Ser Gly Trp Asn Gly Asp Asn Met Leu Glu Pro Ser Ala Asn Met
 195 200 205
 Pro Trp Phe Lys Gly Trp Lys Val Thr Arg Lys Asp Gly His Ala Ser
 210 215 220
 Gly Thr Thr Leu Leu Glu Ala Leu Asp Cys Ile Leu Pro Pro Thr Arg

225	230	235	240
Pro Thr Asp Lys	Pro Leu Arg Leu	Pro Leu Gln Asp Val Tyr	Lys Ile
245	250	255	
Gly Gly Ile Gly Thr Val	Pro Val Gly Arg Val Glu Thr Gly Val	Leu	
260	265	270	
Lys Pro Gly Met Val Val Thr Phe Ala	Pro Val Asn Val Thr Thr Glu		
275	280	285	
Val Lys Ser Val Glu Met His His Glu Ala	Leu Ser Glu Ala Leu Pro		
290	295	300	
Gly Asp Asn Val Gly Phe Asn Val Lys Asn Val Ser Val Lys Asp Val			
305	310	315	320
Arg Arg Gly Asn Val Ala Gly Asp Ser Lys Asn Asp Pro Pro Met Glu			
325	330	335	
Ala Ala Gly Phe Thr Ala Gln Val Ile Ile Leu Asn His Pro Gly Gln			
340	345	350	
Ile Ser Ala Gly Tyr Ala Pro Val Leu Asp Cys His Thr Ala His Ile			
355	360	365	
Ala Cys Lys Phe Ala Glu Leu Lys Glu Lys Ile Asp Arg Arg Ser Gly			
370	375	380	
Lys Lys Leu Glu Asp Gly Pro Lys Phe Leu Lys Ser Gly Asp Ala Ala			
385	390	395	400
Ile Val Asp Met Val Pro Gly Lys Pro Met Cys Val Glu Ser Phe Ser			
405	410	415	
Asp Tyr Pro Pro Leu Gly Arg Phe Ala Val Arg Asp Met Arg Gln Thr			
420	425	430	
Val Ala Val Gly Val Ile Lys Ala Val Asp Lys Lys Ala Ala Gly Ala			
435	440	445	
Gly Lys Val Thr Lys Ser Ala Gln Lys Ala Gln Lys Ala Lys			
450	455	460	

<210> 870

<211> 1766

<212> DNA

<213> *Mus musculus*

<220>

<221> CDS

<222> (220).. (1380)

<400> 870

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 gggctttttt tgtgtaatcg ctgccaaaga agaaagcgaa gtagcctccg gtcaagcgag 120
 gaggccggct cttccgcagc catagcccgc ctcaaggatt tgggaggtag cgaagggcag 180
 ggagctggac cctgaggtgc cgccgcgacc gcagcagcc atg gag gac gag atg 234
 Met Glu Asp Glu Met

1 5

ccc aag act cta tac gtc ggt aac ctt tct cga gat gtg aca gaa gct 282
 Pro Lys Thr Leu Tyr Val Gly Asn Leu Ser Arg Asp Val Thr Glu Ala

10 15 20

ctc atc ctc cag ctc ttt agc cag att gga cct tgt aaa aac tgc aaa 330
 Leu Ile Leu Gln Leu Phe Ser Gln Ile Gly Pro Cys Lys Asn Cys Lys

25 30 35

atg att atg gat aca gca gga aat gac cca tac tgt ttt gtg gag ttc 378
 Met Ile Met Asp Thr Ala Gly Asn Asp Pro Tyr Cys Phe Val Glu Phe

40 45 50

cat gag cac cgt cat gca gct gca gcc ctg gct gcc atg aat ggg cgg 426
 His Glu His Arg His Ala Ala Ala Ala Leu Ala Ala Met Asn Gly Arg

55 60 65

aag ata atg ggt aag gaa gtg aaa gtg aat tgg gca aca acc cct agc 474
 Lys Ile Met Gly Lys Glu Val Lys Val Asn Trp Ala Thr Thr Pro Ser
 70 75 80 85
 agt caa aag aag gat acg agc agt agt acc gtt gtc agc aca cag cgt 522
 Ser Gln Lys Lys Asp Thr Ser Ser Ser Thr Val Val Ser Thr Gln Arg
 90 95 100
 tca caa gat cat ttc cat gtg ttt gtt ggt gac ctc agt cca gaa atc 570
 Ser Gln Asp His Phe His Val Phe Val Gly Asp Leu Ser Pro Glu Ile
 105 110 115
 aca acc gaa gac atc aaa gca gcg ttt gca cca ttt gga aga att tca 618
 Thr Thr Glu Asp Ile Lys Ala Ala Phe Ala Pro Phe Gly Arg Ile Ser
 120 125 130
 gat gcc cgt gtg gta aaa gac atg gct acc ggg aag tct aag gga tat 666
 Asp Ala Arg Val Val Lys Asp Met Ala Thr Gly Lys Ser Lys Gly Tyr
 135 140 145
 ggc ttt gtc tcc ttt ttc aac aaa tgg gat gca gaa aat gcc att cag 714
 Gly Phe Val Ser Phe Phe Asn Lys Trp Asp Ala Glu Asn Ala Ile Gln
 150 155 160 165
 cag atg ggt ggc cag tgg ctt ggt gga aga caa atc aga act aac tgg 762
 Gln Met Gly Gly Gln Trp Leu Gly Gly Arg Gln Ile Arg Thr Asn Trp
 170 175 180
 gca acc cga aag cct cca gct cca aag agt aca tat gag tgc aac acc 810
 Ala Thr Arg Lys Pro Pro Ala Pro Lys Ser Thr Tyr Glu Ser Asn Thr
 185 190 195
 aaa cag ctg tca tat gat gag gtt gtg agt cag tct agt ccc aac aac 858
 Lys Gln Leu Ser Tyr Asp Glu Val Val Ser Gln Ser Ser Pro Asn Asn
 200 205 210
 tgc act gtg tac tgt gga ggg gtg acg tca gga ctg aca gaa caa cta 906
 Cys Thr Val Tyr Cys Gly Gly Val Thr Ser Gly Leu Thr Glu Gln Leu

215	220	225	
atg cgt cag act ttt tct cca ttt gga caa ata atg gaa att cga gtc	954		
Met Arg Gln Thr Phe Ser Pro Phe Gly Gln Ile Met Glu Ile Arg Val			
230	235	240	245
ttc cca gat aaa gga tac tca ttt gtt cgg ttc agt tcc cat gaa agt	1002		
Phe Pro Asp Lys Gly Tyr Ser Phe Val Arg Phe Ser Ser His Glu Ser			
250	255	260	
gca gca cat gcg att gtt tct gtt aat ggt act acc att gaa ggg cat	1050		
Ala Ala His Ala Ile Val Ser Val Asn Gly Thr Thr Ile Glu Gly His			
265	270	275	
gtg gtg aaa tgt tat tgg ggc aaa gag act ctt gat atg ata aac cct	1098		
Val Val Lys Cys Tyr Trp Gly Lys Glu Thr Leu Asp Met Ile Asn Pro			
280	285	290	
gtg caa cag caa aat caa att gga tat cca cca aca tat ggc cag tgg	1146		
Val Gln Gln Gln Asn Gln Ile Gly Tyr Pro Pro Thr Tyr Gly Gln Trp			
295	300	305	
ggc cag tgg tat gga aat gca caa cag att ggc cag tat gtg cct aac	1194		
Gly Gln Trp Tyr Gly Asn Ala Gln Gln Ile Gly Gln Tyr Val Pro Asn			
310	315	320	325
ggt tgg caa gta cct gcc tat gga gtg tat ggc cag cca tgg agc cag	1242		
Gly Trp Gln Val Pro Ala Tyr Gly Val Tyr Gly Gln Pro Trp Ser Gln			
330	335	340	
cag ggg ttc aat cag acc cag tct tct gca ccg tgg atg gga ccc aat	1290		
Gln Gly Phe Asn Gln Thr Gln Ser Ser Ala Pro Trp Met Gly Pro Asn			
345	350	355	
tac agt gtg cca cca cct caa ggg cag aat ggc agc atg ttg cct agt	1338		
Tyr Ser Val Pro Pro Pro Gln Gly Gln Asn Gly Ser Met Leu Pro Ser			
360	365	370	
cag cct gct ggg tat cga gtg gcc ggg tat gaa acc cag tga	1380		

Gln Pro Ala Gly Tyr Arg Val Ala Gly Tyr Glu Thr Gln

375

380

385

aaacagacta cagaacggaa gccagtgct tgaagcaggg agggtaggaa aacigtgtgt 1440
 tacgtaaaga tttatcaa at cagtcagtac aaattgccag atacaatgta tttatttaaa 1500
 agattcattt ttttaatcat gaaattactt ttcattccaca ttgtttttaa aaggaacacg 1560
 atgggtgatg ttgccaatt ttgtctcctt cattatcttt ttgtataaag tttctcagat 1620
 ccttgattca aagacaaatg cagggattac tgccaccttt ttaaaaataa gaggcagaaa 1680
 attgcacaat gtigaacttt tctccactaa aatcggtgtc agtttttagtt tgcattcctg 1740
 ataggattta aaacatgtaa tataga 1766

<210> 871

<211> 386

<212> PRT

<213> Mus musculus

<400> 871

Met Glu Asp Glu Met Pro Lys Thr Leu Tyr Val Gly Asn Leu Ser Arg

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5

10

15

Asp Val Thr Glu Ala Leu Ile Leu Gln Leu Phe Ser Gln Ile Gly Pro

20

25

30

Cys Lys Asn Cys Lys Met Ile Met Asp Thr Ala Gly Asn Asp Pro Tyr

35

40

45

Cys Phe Val Glu Phe His Glu His Arg His Ala Ala Ala Leu Ala

50

55

60

Ala Met Asn Gly Arg Lys Ile Met Gly Lys Glu Val Lys Val Asn Trp

65

70

75

80

Ala Thr Thr Pro Ser Ser Gln Lys Lys Asp Thr Ser Ser Ser Thr Val

85

90

95

Val Ser Thr Gln Arg Ser Gln Asp His Phe His Val Phe Val Gly Asp

100	105	110
Leu Ser Pro Glu Ile Thr Thr Glu Asp Ile Lys Ala Ala Phe Ala Pro		
115	120	125
Phe Gly Arg Ile Ser Asp Ala Arg Val Val Lys Asp Met Ala Thr Gly		
130	135	140
Lys Ser Lys Gly Tyr Gly Phe Val Ser Phe Phe Asn Lys Trp Asp Ala		
145	150	155
Glu Asn Ala Ile Gln Gln Met Gly Gly Gln Trp Leu Gly Gly Arg Gln		
165	170	175
Ile Arg Thr Asn Trp Ala Thr Arg Lys Pro Pro Ala Pro Lys Ser Thr		
180	185	190
Tyr Glu Ser Asn Thr Lys Gln Leu Ser Tyr Asp Glu Val Val Ser Gln		
195	200	205
Ser Ser Pro Asn Asn Cys Thr Val Tyr Cys Gly Gly Val Thr Ser Gly		
210	215	220
Leu Thr Glu Gln Leu Met Arg Gln Thr Phe Ser Pro Phe Gly Gln Ile		
225	230	235
Met Glu Ile Arg Val Phe Pro Asp Lys Gly Tyr Ser Phe Val Arg Phe		
245	250	255
Ser Ser His Glu Ser Ala Ala His Ala Ile Val Ser Val Asn Gly Thr		
260	265	270
Thr Ile Glu Gly His Val Val Lys Cys Tyr Trp Gly Lys Glu Thr Leu		
275	280	285
Asp Met Ile Asn Pro Val Gln Gln Gln Asn Gln Ile Gly Tyr Pro Pro		
290	295	300
Thr Tyr Gly Gln Trp Gly Gln Trp Tyr Gly Asn Ala Gln Gln Ile Gly		
305	310	315
Gln Tyr Val Pro Asn Gly Trp Gln Val Pro Ala Tyr Gly Val Tyr Gly		
325	330	335

Gln Pro Trp Ser Gln Gln Gly Phe Asn Gln Thr Gln Ser Ser Ala Pro

340

345

350

Trp Met Gly Pro Asn Tyr Ser Val Pro Pro Pro Gln Gly Gln Asn Gly

355

360

365

Ser Met Leu Pro Ser Gln Pro Ala Gly Tyr Arg Val Ala Gly Tyr Glu

370

375

380

Thr Gln

385

<210> 872

<211> 1877

<212> DNA

<213> *Mus musculus*

<220>

<221> CDS

<222> (197).. (1531)

<400> 872

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 tttaaaacac ggacacttga aatccttata ctctaaccctc ttaagacctt gacatccct 120
 ccttcccaaa ctctcaccct gagggcctct caccacagat gccctgctct ctgacctgga 180
 gaccaccact tcacac atg tca cgg tta ggg gct cca aaa gag cgc cca cca 232

Met Ser Arg Leu Gly Ala Pro Lys Glu Arg Pro Pro

1

5

10

gag aca ctc aca cct ccc cca ccc tat ggc cac cag cca cag aca ggg 280

Glu Thr Leu Thr Pro Pro Pro Pro Tyr Gly His Gln Pro Gln Thr Gly

15

20

25

tct gga gaa tct tca gga acc act ggg gac aag gat cat cta tac agc 328

Ser Gly Glu Ser Ser Gly Thr Thr Gly Asp Lys Asp His Leu Tyr Ser
 30 35 40
 aca gta tgc aag cct cgg tcc cca aag cct gtg gcc cct gtg gct cct 376
 Thr Val Cys Lys Pro Arg Ser Pro Lys Pro Val Ala Pro Val Ala Pro
 45 50 55 60
 cca ttc tcc tct tcc agt ggt gtg ttg ggc aat ggc ctc tgt gag cta 424
 Pro Phe Ser Ser Ser Ser Gly Val Leu Gly Asn Gly Leu Cys Glu Leu
 65 70 75
 gac cgt ttg ctt cag gaa ctt aat gcc acc cag ttc aac att aca gat 472
 Asp Arg Leu Leu Gln Glu Leu Asn Ala Thr Gln Phe Asn Ile Thr Asp
 80 85 90
 gaa atc atg tct cag ttc cca tct agt aaa atg gct gaa ggg gaa gag 520
 Glu Ile Met Ser Gln Phe Pro Ser Ser Lys Met Ala Glu Gly Glu Glu
 95 100 105
 aag gag gac caa tct gaa gac aag agc tca ccc act gtc cct ccc agc 568
 Lys Glu Asp Gln Ser Glu Asp Lys Ser Ser Pro Thr Val Pro Pro Ser
 110 115 120
 cca ttc cct gcc ccc tca aag cct tca gcc acc tcc gcc act cag gaa 616
 Pro Phe Pro Ala Pro Ser Lys Pro Ser Ala Thr Ser Ala Thr Gln Glu
 125 130 135 140
 ctg gat aga ctg atg gcc tgc ctc tct gac ttc cgt gtt cag aac cat 664
 Leu Asp Arg Leu Met Ala Ser Leu Ser Asp Phe Arg Val Gln Asn His
 145 150 155
 ctt cca gcc tca ggg cca cct cag cct cca gca gcg agc ccc acc cgt 712
 Leu Pro Ala Ser Gly Pro Pro Gln Pro Pro Ala Ala Ser Pro Thr Arg
 160 165 170
 gaa gga tgc cca tct cca cca gga cag act agc aaa ggc agt ctg gac 760
 Glu Gly Cys Pro Ser Pro Pro Gly Gln Thr Ser Lys Gly Ser Leu Asp
 175 180 185

acc atg ctg ggc ctg ctg cag tct gac ctc agc cgt cgt ggt gtc ccc 808
 Thr Met Leu Gly Leu Leu Gln Ser Asp Leu Ser Arg Arg Gly Val Pro
 190 195 200
 aca cag gcc aaa ggc ctc tgt ggc tcc tgc aat aaa cct ata gct ggg 856
 Thr Gln Ala Lys Gly Leu Cys Gly Ser Cys Asn Lys Pro Ile Ala Gly
 205 210 215 220
 caa gtg gtt aca gcc ctg ggc aga gcc tgg cac ccg gag cac ttc ctt 904
 Gln Val Val Thr Ala Leu Gly Arg Ala Trp His Pro Glu His Phe Leu
 225 230 235
 tgc agc ggt tgt tcc aca acc ctg gga ggc agc agc ttc ttc gag aag 952
 Cys Ser Gly Cys Ser Thr Thr Leu Gly Gly Ser Ser Phe Phe Glu Lys
 240 245 250
 gat ggg gct ccc ttt tgc ccc gag tgc tac tit gag cgc ttc tcc cca 1000
 Asp Gly Ala Pro Phe Cys Pro Glu Cys Tyr Phe Glu Arg Phe Ser Pro
 255 260 265
 cga tgt ggc ttc tgt aac caa ccc atc cga cac aaa atg gtt acc gcc 1048
 Arg Cys Gly Phe Cys Asn Gln Pro Ile Arg His Lys Met Val Thr Ala
 270 275 280
 ttg ggc acc cac tgg cac cca gaa cat ttc tgc tgc gtc agc tgc gga 1096
 Leu Gly Thr His Trp His Pro Glu His Phe Cys Cys Val Ser Cys Gly
 285 290 295 300
 gag cct ttt gga gaa gag ggt ttc cac gag cgg gag ggt cgt ccg tac 1144
 Glu Pro Phe Gly Glu Glu Gly Phe His Glu Arg Glu Gly Arg Pro Tyr
 305 310 315
 tgc cgg cgg gac ttc ctg cag ctg ttc gcc cca cgc tgc cag ggc tgc 1192
 Cys Arg Arg Asp Phe Leu Gln Leu Phe Ala Pro Arg Cys Gln Gly Cys
 320 325 330
 caa ggc cct att ttg gat aac tac atc tcg gca ctc agc gcg ctc tgg 1240
 Gln Gly Pro Ile Leu Asp Asn Tyr Ile Ser Ala Leu Ser Ala Leu Trp

335 340 345
 cac cca gac tgc ttc gtg tgc agg gaa tgc ctt gcg ccc ttc tcc gga 1288
 His Pro Asp Cys Phe Val Cys Arg Glu Cys Leu Ala Pro Phe Ser Gly
 350 355 360
 ggc agc ttt ttt gag cac gag ggt cgc cct ttg tgt gaa aac cat ttc 1336
 Gly Ser Phe Phe Glu His Glu Gly Arg Pro Leu Cys Glu Asn His Phe
 365 370 375 380
 cat gct cag cgt ggt tcg ctg tgt gcc acg tgt ggt ctc cca gtg acc 1384
 His Ala Gln Arg Gly Ser Leu Cys Ala Thr Cys Gly Leu Pro Val Thr
 385 390 395
 ggc cgc tgt gtg tcc gct ctg ggc cga cgc ttc cat cca gac cac ttc 1432
 Gly Arg Cys Val Ser Ala Leu Gly Arg Arg Phe His Pro Asp His Phe
 400 405 410
 acc tgc aca ttc tgc ctg cgc cca ctc acc aaa ggc tcc ttc cag gag 1480
 Thr Cys Thr Phe Cys Leu Arg Pro Leu Thr Lys Gly Ser Phe Gln Glu
 415 420 425
 cgc gcc agc aag cct tac tgc cag cct tgc ttc ctg aag ctc ttc ggc 1528
 Arg Ala Ser Lys Pro Tyr Cys Gln Pro Cys Phe Leu Lys Leu Phe Gly
 430 435 440
 tga cctcctcttg ggaacagaga tctccaaaac taagccttca aaaacacatt 1581
 445
 cgtgaaaaag actgagtcct ccagatccct ggctctggag ctaccaggc atccttgctc 1641
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 atgattctgg ttctcttgct tgaccaagta gaggccagga tgtccctggt cacccatggc 1821
 acactattct gtacacattt ttttttctac aaacataaaa acacactoca cacttt 1877

<210> 873

<211> 444

<212> PRT

<213> *Mus musculus*

<400> 873

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          20             25             30
Ser Gly Thr Thr Gly Asp Lys Asp His Leu Tyr Ser Thr Val Cys Lys
          35             40             45
Pro Arg Ser Pro Lys Pro Val Ala Pro Val Ala Pro Pro Phe Ser Ser
          50             55             60
Ser Ser Gly Val Leu Gly Asn Gly Leu Cys Glu Leu Asp Arg Leu Leu
          65             70             75             80
Gln Glu Leu Asn Ala Thr Gln Phe Asn Ile Thr Asp Glu Ile Met Ser
          85             90             95
Gln Phe Pro Ser Ser Lys Met Ala Glu Gly Glu Glu Lys Glu Asp Gln
          100            105            110
Ser Glu Asp Lys Ser Ser Pro Thr Val Pro Pro Ser Pro Phe Pro Ala
          115            120            125
Pro Ser Lys Pro Ser Ala Thr Ser Ala Thr Gln Glu Leu Asp Arg Leu
          130            135            140
Met Ala Ser Leu Ser Asp Phe Arg Val Gln Asn His Leu Pro Ala Ser
          145            150            155            160
Gly Pro Pro Gln Pro Pro Ala Ala Ser Pro Thr Arg Glu Gly Cys Pro
          165            170            175
Ser Pro Pro Gly Gln Thr Ser Lys Gly Ser Leu Asp Thr Met Leu Gly
          180            185            190
Leu Leu Gln Ser Asp Leu Ser Arg Arg Gly Val Pro Thr Gln Ala Lys

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195	200	205
Gly Leu Cys Gly Ser Cys Asn Lys Pro Ile Ala Gly Gln Val Val Thr		
210	215	220
Ala Leu Gly Arg Ala Trp His Pro Glu His Phe Leu Cys Ser Gly Cys		
225	230	235
Ser Thr Thr Leu Gly Gly Ser Ser Phe Phe Glu Lys Asp Gly Ala Pro		
245	250	255
Phe Cys Pro Glu Cys Tyr Phe Glu Arg Phe Ser Pro Arg Cys Gly Phe		
260	265	270
Cys Asn Gln Pro Ile Arg His Lys Met Val Thr Ala Leu Gly Thr His		
275	280	285
Trp His Pro Glu His Phe Cys Cys Val Ser Cys Gly Glu Pro Phe Gly		
290	295	300
Glu Glu Gly Phe His Glu Arg Glu Gly Arg Pro Tyr Cys Arg Arg Asp		
305	310	315
Phe Leu Gln Leu Phe Ala Pro Arg Cys Gln Gly Cys Gln Gly Pro Ile		
325	330	335
Leu Asp Asn Tyr Ile Ser Ala Leu Ser Ala Leu Trp His Pro Asp Cys		
340	345	350
Phe Val Cys Arg Glu Cys Leu Ala Pro Phe Ser Gly Gly Ser Phe Phe		
355	360	365
Glu His Glu Gly Arg Pro Leu Cys Glu Asn His Phe His Ala Gln Arg		
370	375	380
Gly Ser Leu Cys Ala Thr Cys Gly Leu Pro Val Thr Gly Arg Cys Val		
385	390	395
Ser Ala Leu Gly Arg Arg Phe His Pro Asp His Phe Thr Cys Thr Phe		
405	410	415
Cys Leu Arg Pro Leu Thr Lys Gly Ser Phe Gln Glu Arg Ala Ser Lys		
420	425	430

Pro Tyr Cys Gln Pro Cys Phe Leu Lys Leu Phe Gly

435

440

<210> 874

<211> 2908

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (626).. (2050)

<400> 874

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cgcccgtagc ccgcgcccac ggccgcgcgc acccggtaca gtccccagga ctccgcaccc 180
cgcgccaccg tccagctcgc agttccgcgc caccggggcc attctcacct ggcgggcggc 240
cccgccaccg cccggaccac agcccccgcg ccgcggacag ccacagtggc cgcgacaacg 300
gtgggggaca ctgctgagtc caagagcgtg cagcctggcc atcggacctt cttatctgcc 360
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gctcaggtac cctctctctt tcttcggact ccggaggacc ttctgggccc ccacattaat 600
gaggcagcca cctggcgagt ctgac atg gct gtc agc gac gct ctg ctc ccg 652

Met Ala Val Ser Asp Ala Leu Leu Pro

1

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tcc ttc tcc acg ttc gcg tcc ggc ccg gcg gga agg gag aag aca ctg 700
Ser Phe Ser Thr Phe Ala Ser Gly Pro Ala Gly Arg Glu Lys Thr Leu

10

15

20

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cgt cca gca ggt gcc ccg act aac cgt tgg cgt gag gaa ctc tct cac 748
 Arg Pro Ala Gly Ala Pro Thr Asn Arg Trp Arg Glu Glu Leu Ser His
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 Met Lys Arg Leu Pro Pro Leu Pro Gly Arg Pro Tyr Asp Leu Ala Ala
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 acg gtg gcc aca gac ctg gag agt ggc gga gct ggt gca gct tgc agc 844
 Thr Val Ala Thr Asp Leu Glu Ser Gly Gly Ala Gly Ala Ala Cys Ser
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 Ser Asn Asn Pro Ala Leu Leu Ala Arg Arg Glu Thr Glu Glu Phe Asn
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 Asp Leu Leu Asp Leu Asp Phe Ile Leu Ser Asn Ser Leu Thr His Gln
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 Glu Ser Val Ala Ala Thr Val Thr Thr Ser Ala Ser Ala Ser Ser Ser
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 Phe Ser Tyr Pro Ile Arg Ala Gly Gly Asp Pro Gly Val Ala Ala Arg
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 Thr Ala Pro Phe Asn Leu Gly Asp Ile Asn Asp Val Ser Pro Ser Gly

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Gly Phe Val Ala Glu Leu Leu Arg Pro Glu Leu Asp Pro Val Tyr Ile				
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ccg cca cag cag cct cag ccg cca ggt ggg ggg ctg atg ggc aag ttt	1276			
Pro Pro Gln Gln Pro Gln Pro Pro Gly Gly Gly Leu Met Gly Lys Phe				
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Val Leu Lys Ala Ser Leu Thr Thr Pro Gly Ser Glu Tyr Ser Ser Pro				
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tcg gtc atc agt gtt agc aaa gga agc cca gac ggc agc cac ccc gtg	1372			
Ser Val Ile Ser Val Ser Lys Gly Ser Pro Asp Gly Ser His Pro Val				
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cac gac ttc ccc ctg ggg cgg cag ctc ccc acc agg act acc cct aca	1564			
His Asp Phe Pro Leu Gly Arg Gln Leu Pro Thr Arg Thr Thr Pro Thr				
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ctg agt ccc gag gaa ctg ctg aac agc agg gac tgt cac cct ggc ctg	1612			
Leu Ser Pro Glu Glu Leu Leu Asn Ser Arg Asp Cys His Pro Gly Leu				
315	320	325		
cct ctt ccc cca gga ttc cat ccc cat ccg ggg gcc aac tac cct cct	1660			

Pro Leu Pro Pro Gly Phe His Pro His Pro Gly Ala Asn Tyr Pro Pro
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 Phe Leu Pro Asp Gln Met Gln Ser Gln Val Pro Ser Leu His Tyr Gln
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 gag ctc atg cca ccg ggt tcc tgc ctg cca gag gag ccc aag cca aag 1756
 Glu Leu Met Pro Pro Gly Ser Cys Leu Pro Glu Glu Pro Lys Pro Lys
 365 370 375
 agg gga aga agg tcg tgg ccc cgg aaa aga aca gcc acc cac act tgt 1804
 Arg Gly Arg Arg Ser Trp Pro Arg Lys Arg Thr Ala Thr His Thr Cys
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 gac tat gca ggc tgt ggc aaa acc tat acc aag agt tct cat ctc aag 1852
 Asp Tyr Ala Gly Cys Gly Lys Thr Tyr Thr Lys Ser Ser His Leu Lys
 395 400 405
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 Ala His Leu Arg Thr His Thr Gly Glu Lys Pro Tyr His Cys Asp Trp
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 Tyr Arg Lys His Thr Gly His Arg Pro Phe Gln Cys Gln Lys Cys Asp
 445 450 455
 agg gcc ttt tcc agg tcg gac cac ctt gcc tta cac atg aag agg cac 2044
 Arg Ala Phe Ser Arg Ser Asp His Leu Ala Leu His Met Lys Arg His
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 Phe

475

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<210> 875

<211> 474

<212> PRT

<213> Mus musculus

<400> 875

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Asn Arg Trp Arg Glu Glu Leu Ser His Met Lys Arg Leu Pro Pro Leu
          35             40             45
Pro Gly Arg Pro Tyr Asp Leu Ala Ala Thr Val Ala Thr Asp Leu Glu
          50             55             60

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Ser Gly Gly Ala Gly Ala Ala Cys Ser Ser Asn Asn Pro Ala Leu Leu
 65 70 75 80
 Ala Arg Arg Glu Thr Glu Glu Phe Asn Asp Leu Leu Asp Leu Asp Phe
 85 90 95
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 100 105 110
 Thr Thr Ser Ala Ser Ala Ser Ser Ser Ser Ser Pro Ala Ser Ser Gly
 115 120 125
 Pro Ala Ser Ala Pro Ser Thr Cys Ser Phe Ser Tyr Pro Ile Arg Ala
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 Gly Gly Asp Pro Gly Val Ala Ala Arg Asn Thr Gly Gly Gly Leu Leu
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 Tyr Ser Arg Glu Ser Ala Pro Pro Pro Thr Ala Pro Phe Asn Leu Gly
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 Asp Ile Asn Asp Val Ser Pro Ser Gly Gly Phe Val Ala Glu Leu Leu
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 Arg Pro Glu Leu Asp Pro Val Tyr Ile Pro Pro Gln Gln Pro Gln Pro
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 Pro Gly Gly Gly Leu Met Gly Lys Phe Val Leu Lys Ala Ser Leu Thr
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 Thr Pro Gly Ser Glu Tyr Ser Ser Pro Ser Val Ile Ser Val Ser Lys
 225 230 235 240
 Gly Ser Pro Asp Gly Ser His Pro Val Val Val Ala Pro Tyr Ser Gly
 245 250 255
 Gly Pro Pro Arg Met Cys Pro Lys Ile Lys Gln Glu Ala Val Pro Ser
 260 265 270
 Cys Thr Val Ser Arg Ser Leu Glu Ala His Leu Ser Ala Gly Pro Gln
 275 280 285
 Leu Ser Asn Gly His Arg Pro Asn Thr His Asp Phe Pro Leu Gly Arg

290 295 300
 Gln Leu Pro Thr Arg Thr Thr Pro Thr Leu Ser Pro Glu Glu Leu Leu
 305 310 315 320
 Asn Ser Arg Asp Cys His Pro Gly Leu Pro Leu Pro Pro Gly Phe His
 325 330 335
 Pro His Pro Gly Ala Asn Tyr Pro Pro Phe Leu Pro Asp Gln Met Gln
 340 345 350
 Ser Gln Val Pro Ser Leu His Tyr Gln Glu Leu Met Pro Pro Gly Ser
 355 360 365
 Cys Leu Pro Glu Glu Pro Lys Pro Lys Arg Gly Arg Arg Ser Trp Pro
 370 375 380
 Arg Lys Arg Thr Ala Thr His Thr Cys Asp Tyr Ala Gly Cys Gly Lys
 385 390 395 400
 Thr Tyr Thr Lys Ser Ser His Leu Lys Ala His Leu Arg Thr His Thr
 405 410 415
 Gly Glu Lys Pro Tyr His Cys Asp Trp Asp Gly Cys Gly Trp Lys Phe
 420 425 430
 Ala Arg Ser Asp Glu Leu Thr Arg His Tyr Arg Lys His Thr Gly His
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<210> 876

<211> 558

<212> DNA

<213> Mus musculus

<400> 876

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 tggaagagac attcgaaatg aagataagat cctgaccatc gaagtgaaga tgggctggaa 180
 agaagggacc aaaatcacct ttcccaagga aggggaccag acctcgaaca acattccagc 240
 agacatcgtc tttgttttaa aggacaagcc acacaatatc ttcaagagag atggttctga 300
 tgtcatctat ccagccagga ttagccttcg ggaggctctc tgtggttgca ctgtgaatgt 360
 ccctactctg gacggcagga ccatccctgt tgtattcaaa gatgtcatca ggcctgggtat 420
 gcggcggaat gtccctggag aaggcctccc tctcccaaaa acacctgaga aacgtggaga 480
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<210> 877

<211> 2048

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (178).. (1767)

<400> 877

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 ccaccittcg tggaaatctg agccggctgt acagctttcc tccttgttcc tgcagcc 177
 atg tcc acg aac gag aat gct aac tta cca gct gcc cga ctt aac agg 225
 Met Ser Thr Asn Glu Asn Ala Asn Leu Pro Ala Ala Arg Leu Asn Arg
 1 5 10 15
 ttc aag aac aag ggg aag gac agc aca gaa atg cgt cgc cgc cga ata 273

Phe	Lys	Asn	Lys	Gly	Lys	Asp	Ser	Thr	Glu	Met	Arg	Arg	Arg	Arg	Ile	
			20					25					30			
gaa	ggt	aat	gtg	gaa	ctc	agg	aaa	gct	aaa	aaa	gat	gag	cag	atg	ctg	321
Glu	Val	Asn	Val	Glu	Leu	Arg	Lys	Ala	Lys	Lys	Asp	Glu	Gln	Met	Leu	
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aaa	aga	aga	aac	gtc	agc	tcc	ttt	cct	gat	gat	gct	act	tct	ccg	cta	369
Lys	Arg	Arg	Asn	Val	Ser	Ser	Phe	Pro	Asp	Asp	Ala	Thr	Ser	Pro	Leu	
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cag	gaa	aac	cgg	aac	aac	cag	ggt	act	gta	aat	tgg	tct	ggt	gag	gac	417
Gln	Glu	Asn	Arg	Asn	Asn	Gln	Gly	Thr	Val	Asn	Trp	Ser	Val	Glu	Asp	
	65			70				75			80					
att	ggt	aaa	ggc	ata	aac	agt	aac	aat	ttg	gaa	agc	cag	ctc	caa	gct	465
Ile	Val	Lys	Gly	Ile	Asn	Ser	Asn	Asn	Leu	Glu	Ser	Gln	Leu	Gln	Ala	
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act	caa	gct	gct	cgg	aaa	tig	ctt	tct	aga	gag	aaa	cag	cct	cct	ata	513
Thr	Gln	Ala	Ala	Arg	Lys	Leu	Leu	Ser	Arg	Glu	Lys	Gln	Pro	Pro	Ile	
		100						105				110				
gac	aac	atc	atc	cgg	gct	ggt	ttg	atc	cca	aaa	ttt	gtg	tcc	ttc	ttg	561
Asp	Asn	Ile	Ile	Arg	Ala	Gly	Leu	Ile	Pro	Lys	Phe	Val	Ser	Phe	Leu	
		115				120					125					
ggc	aaa	act	gat	tgt	agt	cct	att	cag	ttt	gag	tct	gct	tgg	gca	ctc	609
Gly	Lys	Thr	Asp	Cys	Ser	Pro	Ile	Gln	Phe	Glu	Ser	Ala	Trp	Ala	Leu	
		130				135					140					
acc	aac	att	gct	tct	gga	aca	tct	gaa	cag	acc	aaa	gct	gtg	gtg	gat	657
Thr	Asn	Ile	Ala	Ser	Gly	Thr	Ser	Glu	Gln	Thr	Lys	Ala	Val	Val	Asp	
	145				150					155			160			
gga	ggt	gct	atc	cca	gcg	ttt	att	tct	ctc	ttg	gca	tct	cct	cat	gct	705
Gly	Gly	Ala	Ile	Pro	Ala	Phe	Ile	Ser	Leu	Leu	Ala	Ser	Pro	His	Ala	
			165					170				175				

cac atc agc gag caa gct gtt tgg gct ctt gga aac att gca ggt gat 753
 His Ile Ser Glu Gln Ala Val Trp Ala Leu Gly Asn Ile Ala Gly Asp
 180 185 190
 ggt tca gct ttc cga gac tta gtt atc aaa cac ggt gcg att gac cca 801
 Gly Ser Ala Phe Arg Asp Leu Val Ile Lys His Gly Ala Ile Asp Pro
 195 200 205
 ctg ttg gca ctt ctt gca gtt ccc gat ctg tct acc ttg gca tgt ggt 849
 Leu Leu Ala Leu Leu Ala Val Pro Asp Leu Ser Thr Leu Ala Cys Gly
 210 215 220
 tac tta cgt aat ctt acc tgg aca ctt tca aac ctt tgt cga aac aag 897
 Tyr Leu Arg Asn Leu Thr Trp Thr Leu Ser Asn Leu Cys Arg Asn Lys
 225 230 235 240
 aac cct gca cct ccc tta gac gcc gtt gag cag att ctt cct acg tta 945
 Asn Pro Ala Pro Pro Leu Asp Ala Val Glu Gln Ile Leu Pro Thr Leu
 245 250 255
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 Val Arg Leu Leu His His Asn Asp Pro Glu Val Leu Ala Asp Ser Cys
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 275 280 285
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 Thr Glu Leu Pro Ile Val Thr Pro Ala Leu Arg Ala Ile Gly Asn Ile
 305 310 315 320
 gtc act gga aca gat gag cag act cag aaa gtg atc gat gca gga gca 1185
 Val Thr Gly Thr Asp Glu Gln Thr Gln Lys Val Ile Asp Ala Gly Ala

325	330	335	
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Leu Ala Val Phe Pro Ser Leu Leu Thr Asn Pro Lys Thr Asn Ile Gln			
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Lys Glu Ala Thr Trp Thr Met Ser Asn Ile Thr Ala Gly Arg Gln Asp			
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cag ata cag caa gtt gtg aat cac ggc cta gtc ccc ttt ctt gtt ggt			1329
Gln Ile Gln Gln Val Val Asn His Gly Leu Val Pro Phe Leu Val Gly			
370	375	380	
gtc ctc tct aag gcg gac ttt aag aca cag aag gag gcc gcg tgg gct			1377
Val Leu Ser Lys Ala Asp Phe Lys Thr Gln Lys Glu Ala Ala Trp Ala			
385	390	395	400
ata acc aac tat acc agc ggt ggg act gtt gag cag att gtg tat ctc			1425
Ile Thr Asn Tyr Thr Ser Gly Gly Thr Val Glu Gln Ile Val Tyr Leu			
405	410	415	
gtt cac tgt ggg ata ata gaa cct ttg atg aac ctc ctg agt gca aaa			1473
Val His Cys Gly Ile Ile Glu Pro Leu Met Asn Leu Leu Ser Ala Lys			
420	425	430	
gat acc aag att att cag gtt att ctt gac gcc att tca aat atc ttt			1521
Asp Thr Lys Ile Ile Gln Val Ile Leu Asp Ala Ile Ser Asn Ile Phe			
435	440	445	
cag gct gca gag aaa cta ggt gag aca gaa aag ctc agt ata atg att			1569
Gln Ala Ala Glu Lys Leu Gly Glu Thr Glu Lys Leu Ser Ile Met Ile			
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gaa gag tgt gga ggc ttg gat aaa att gaa gca cta cag agg cat gaa			1617
Glu Glu Cys Gly Gly Leu Asp Lys Ile Glu Ala Leu Gln Arg His Glu			
465	470	475	480
aac gag tct gta tac aag gcc tca ttg aac tta att gag aag tac ttc			1665

Asn Glu Ser Val Tyr Lys Ala Ser Leu Asn Leu Ile Glu Lys Tyr Phe
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 Glu Gly Phe Ala Phe Gln Val Gln Asp Gly Ala Pro Gly Thr Phe Asn
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 Phe
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<211> 529

<212> PRT

<213> Mus musculus

<400> 878

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 35 40 45
 Lys Arg Arg Asn Val Ser Ser Phe Pro Asp Asp Ala Thr Ser Pro Leu

50	55	60	
Gln Glu Asn Arg Asn Asn Gln Gly Thr Val Asn Trp Ser Val Glu Asp			
65	70	75	80
Ile Val Lys Gly Ile Asn Ser Asn Asn Leu Glu Ser Gln Leu Gln Ala			
	85	90	95
Thr Gln Ala Ala Arg Lys Leu Leu Ser Arg Glu Lys Gln Pro Pro Ile			
	100	105	110
Asp Asn Ile Ile Arg Ala Gly Leu Ile Pro Lys Phe Val Ser Phe Leu			
	115	120	125
Gly Lys Thr Asp Cys Ser Pro Ile Gln Phe Glu Ser Ala Trp Ala Leu			
	130	135	140
Thr Asn Ile Ala Ser Gly Thr Ser Glu Gln Thr Lys Ala Val Val Asp			
145	150	155	160
Gly Gly Ala Ile Pro Ala Phe Ile Ser Leu Leu Ala Ser Pro His Ala			
	165	170	175
His Ile Ser Glu Gln Ala Val Trp Ala Leu Gly Asn Ile Ala Gly Asp			
	180	185	190
Gly Ser Ala Phe Arg Asp Leu Val Ile Lys His Gly Ala Ile Asp Pro			
	195	200	205
Leu Leu Ala Leu Leu Ala Val Pro Asp Leu Ser Thr Leu Ala Cys Gly			
	210	215	220
Tyr Leu Arg Asn Leu Thr Trp Thr Leu Ser Asn Leu Cys Arg Asn Lys			
225	230	235	240
Asn Pro Ala Pro Pro Leu Asp Ala Val Glu Gln Ile Leu Pro Thr Leu			
	245	250	255
Val Arg Leu Leu His His Asn Asp Pro Glu Val Leu Ala Asp Ser Cys			
	260	265	270
Trp Ala Ile Ser Tyr Leu Thr Asp Gly Pro Asn Glu Arg Ile Glu Met			
	275	280	285

Val Val Lys Lys Gly Val Val Pro Gln Leu Val Lys Leu Leu Gly Ala
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 Thr Glu Leu Pro Ile Val Thr Pro Ala Leu Arg Ala Ile Gly Asn Ile
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 Val Thr Gly Thr Asp Glu Gln Thr Gln Lys Val Ile Asp Ala Gly Ala
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 Leu Ala Val Phe Pro Ser Leu Leu Thr Asn Pro Lys Thr Asn Ile Gln
 340 345 350
 Lys Glu Ala Thr Trp Thr Met Ser Asn Ile Thr Ala Gly Arg Gln Asp
 355 360 365
 Gln Ile Gln Gln Val Val Asn His Gly Leu Val Pro Phe Leu Val Gly
 370 375 380
 Val Leu Ser Lys Ala Asp Phe Lys Thr Gln Lys Glu Ala Ala Trp Ala
 385 390 395 400
 Ile Thr Asn Tyr Thr Ser Gly Gly Thr Val Glu Gln Ile Val Tyr Leu
 405 410 415
 Val His Cys Gly Ile Ile Glu Pro Leu Met Asn Leu Leu Ser Ala Lys
 420 425 430
 Asp Thr Lys Ile Ile Gln Val Ile Leu Asp Ala Ile Ser Asn Ile Phe
 435 440 445
 Gln Ala Ala Glu Lys Leu Gly Glu Thr Glu Lys Leu Ser Ile Met Ile
 450 455 460
 Glu Glu Cys Gly Gly Leu Asp Lys Ile Glu Ala Leu Gln Arg His Glu
 465 470 475 480
 Asn Glu Ser Val Tyr Lys Ala Ser Leu Asn Leu Ile Glu Lys Tyr Phe
 485 490 495
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515

520

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Phe

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<211> 2760

<212> DNA

<213> Mus musculus

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<222> (381).. (1598)

<400> 879

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 cattcatagc tgtctccaca atg gtt aca gag gtg aac cct aac gtg gtg gtg 413

Met Val Thr Glu Val Asn Pro Asn Val Val Val

1

5

10

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25

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30

35

40

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Cys Gly Ala Gly Thr Phe Val Asn Phe Ala Ser Leu Glu Arg Glu Gly
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 aaa ctc ccc tac agt tgg cgt agg agt gtg ttt gct ctc tta acc ctg 605
 Lys Leu Pro Tyr Ser Trp Arg Arg Ser Val Phe Ala Leu Leu Thr Leu
 60 65 70 75
 ctg cct tca tgt ctt tgg act gac tat ctt ttg gca ttt tat att aac 653
 Leu Pro Ser Cys Leu Trp Thr Asp Tyr Leu Leu Ala Phe Tyr Ile Asn
 80 85 90
 cct tgg agt aaa aat ggc tta aag aag agg aaa cta aca aac ccc gtt 701
 Pro Trp Ser Lys Asn Gly Leu Lys Lys Arg Lys Leu Thr Asn Pro Val
 95 100 105
 cag ctg gat gac ttc gat tct tac atc aag gat atg gcc aag gac tcg 749
 Gln Leu Asp Asp Phe Asp Ser Tyr Ile Lys Asp Met Ala Lys Asp Ser
 110 115 120
 gac tat aaa ttc tct ctt cag ttt gag gag ttg aag ttg att gga ctg 797
 Asp Tyr Lys Phe Ser Leu Gln Phe Glu Glu Leu Lys Leu Ile Gly Leu
 125 130 135
 gat att ccg cac ttt gct gca gat cta ccg ctg aac cga tgt aaa aac 845
 Asp Ile Pro His Phe Ala Ala Asp Leu Pro Leu Asn Arg Cys Lys Asn
 140 145 150 155
 cgc tac aca aac atc ctg ccg tat gac ttt agc cgg gtg agg cta gtc 893
 Arg Tyr Thr Asn Ile Leu Pro Tyr Asp Phe Ser Arg Val Arg Leu Val
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 tcc atg aac gaa gag gaa gga gca gac tac att aat gcc aac tat att 941
 Ser Met Asn Glu Glu Glu Gly Ala Asp Tyr Ile Asn Ala Asn Tyr Ile
 175 180 185
 cct gga tac aac tca ccc cag gag tac att gcc acc cag ggt ccc ctg 989
 Pro Gly Tyr Asn Ser Pro Gln Glu Tyr Ile Ala Thr Gln Gly Pro Leu
 190 195 200

cca gaa acc aga aat gac ttc tgg aag atg gtc cta caa cag aag tcc 1037
 Pro Glu Thr Arg Asn Asp Phe Trp Lys Met Val Leu Gln Gln Lys Ser
 205 210 215
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 His Ile Ile Val Met Leu Thr Gln Cys Asn Glu Lys Arg Arg Val Lys
 220 225 230 235
 tgt gac cac tac tgg cca ttc aca gaa gaa ccc att gct tat ggg gac 1133
 Cys Asp His Tyr Trp Pro Phe Thr Glu Glu Pro Ile Ala Tyr Gly Asp
 240 245 250
 atc acc gtg gag atg gtc tct gag gaa gag gag gag gac tgg gcc agt 1181
 Ile Thr Val Glu Met Val Ser Glu Glu Glu Glu Glu Asp Trp Ala Ser
 255 260 265
 aga cac ttc cgg atc aac tat gcg gac gaa gcg cag gac gtg atg cat 1229
 Arg His Phe Arg Ile Asn Tyr Ala Asp Glu Ala Gln Asp Val Met His
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 Phe Asn Tyr Thr Gly Trp Pro Asp His Gly Val Pro Pro Ala Asn Ala
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 gcc gag agc atc ctg cag ttt gtg ttc aca gtg cga cag caa gcc gcc 1325
 Ala Glu Ser Ile Leu Gln Phe Val Phe Thr Val Arg Gln Gln Ala Ala
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 aag agc aaa ggg ccc atg atc atc cac tgc agt gcg ggt gtg gga cgg 1373
 Lys Ser Lys Gly Pro Met Ile Ile His Cys Ser Ala Gly Val Gly Arg
 320 325 330
 aca gga acc ttc att gcc ctg gac agg ctc ctg caa cac att cga gat 1421
 Thr Gly Thr Phe Ile Ala Leu Asp Arg Leu Leu Gln His Ile Arg Asp
 335 340 345
 cat gaa ttt gtg gac atc tta ggg ctg gta tca gag atg cgc tca tac 1469
 His Glu Phe Val Asp Ile Leu Gly Leu Val Ser Glu Met Arg Ser Tyr

350 355 360
 cga atg tca atg gta cag aca gag gag cag tac att ttt atc cat cag 1517
 Arg Met Ser Met Val Gln Thr Glu Glu Gln Tyr Ile Phe Ile His Gln
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 Cys Val Gln Leu Met Trp Leu Arg Lys Lys Gln Gln Phe Cys Ile Ser
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 Asp Val Ile Tyr Glu Asn Val Ser Lys Ser
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2760

<210> 880

<211> 405

<212> PRT

<213> Mus musculus

<400> 880

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Leu Arg Lys Lys His Leu Gln Met Ala Arg Glu Cys Gly Ala Gly Thr
35 40 45
Phe Val Asn Phe Ala Ser Leu Glu Arg Glu Gly Lys Leu Pro Tyr Ser
50 55 60
Trp Arg Arg Ser Val Phe Ala Leu Leu Thr Leu Leu Pro Ser Cys Leu
65 70 75 80
Trp Thr Asp Tyr Leu Leu Ala Phe Tyr Ile Asn Pro Trp Ser Lys Asn
85 90 95
Gly Leu Lys Lys Arg Lys Leu Thr Asn Pro Val Gln Leu Asp Asp Phe
100 105 110
Asp Ser Tyr Ile Lys Asp Met Ala Lys Asp Ser Asp Tyr Lys Phe Ser
115 120 125
Leu Gln Phe Glu Glu Leu Lys Leu Ile Gly Leu Asp Ile Pro His Phe
130 135 140
Ala Ala Asp Leu Pro Leu Asn Arg Cys Lys Asn Arg Tyr Thr Asn Ile
145 150 155 160
Leu Pro Tyr Asp Phe Ser Arg Val Arg Leu Val Ser Met Asn Glu Glu

	165		170		175
Glu Gly Ala Asp Tyr Ile Asn Ala Asn Tyr Ile Pro Gly Tyr Asn Ser					
	180		185		190
Pro Gln Glu Tyr Ile Ala Thr Gln Gly Pro Leu Pro Glu Thr Arg Asn					
	195		200		205
Asp Phe Trp Lys Met Val Leu Gln Gln Lys Ser His Ile Ile Val Met					
	210		215		220
Leu Thr Gln Cys Asn Glu Lys Arg Arg Val Lys Cys Asp His Tyr Trp					
225		230		235	240
Pro Phe Thr Glu Glu Pro Ile Ala Tyr Gly Asp Ile Thr Val Glu Met					
	245		250		255
Val Ser Glu Glu Glu Glu Glu Asp Trp Ala Ser Arg His Phe Arg Ile					
	260		265		270
Asn Tyr Ala Asp Glu Ala Gln Asp Val Met His Phe Asn Tyr Thr Gly					
	275		280		285
Trp Pro Asp His Gly Val Pro Pro Ala Asn Ala Ala Glu Ser Ile Leu					
	290		295		300
Gln Phe Val Phe Thr Val Arg Gln Gln Ala Ala Lys Ser Lys Gly Pro					
305		310		315	320
Met Ile Ile His Cys Ser Ala Gly Val Gly Arg Thr Gly Thr Phe Ile					
	325		330		335
Ala Leu Asp Arg Leu Leu Gln His Ile Arg Asp His Glu Phe Val Asp					
	340		345		350
Ile Leu Gly Leu Val Ser Glu Met Arg Ser Tyr Arg Met Ser Met Val					
	355		360		365
Gln Thr Glu Glu Gln Tyr Ile Phe Ile His Gln Cys Val Gln Leu Met					
	370		375		380
Trp Leu Arg Lys Lys Gln Gln Phe Cys Ile Ser Asp Val Ile Tyr Glu					
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Asn Val Ser Lys Ser

405

<210> 881

<211> 493

<212> DNA

<213> Mus musculus

<400> 881

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tggacctgca gctgactaac aaggccctgc aggtcatgac agatcttgct atccagttca 180
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ccaaccagac cgtggagatc tccctgcctc ttaacacagt gggctcagtc ttgaagatgg 300
agcctctaaa caatcttcag gtggctgiga agaacaacat tgacgtcttc tacttcagca 360
ctttgtaccc actgcatgtc ctcttcgtgg aggatgggaa gatggaccgg cagatgttcc 420
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<210> 882

<211> 2492

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (146).. (2275)

<400> 882

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 tgtggtaaaa tcggagctctg gcaag atg gaa agg tcc ccg ttt ctg ttg gcg 172
 Met Glu Arg Ser Pro Phe Leu Leu Ala
 1 5
 tgc att ctt ctg ccc ctc gta aga gga cac agc ctt ttc acc tgt gag 220
 Cys Ile Leu Leu Pro Leu Val Arg Gly His Ser Leu Phe Thr Cys Glu
 10 15 20 25
 cca atc acc gtt ccc aga tgt atg aaa atg act tac aac atg acg ttc 268
 Pro Ile Thr Val Pro Arg Cys Met Lys Met Thr Tyr Asn Met Thr Phe
 30 35 40
 ttc cct aac ctg atg ggt cat tat gac cag ggg atc gct gct gtg gaa 316
 Phe Pro Asn Leu Met Gly His Tyr Asp Gln Gly Ile Ala Ala Val Glu
 45 50 55
 atg ggg cac ttt ctg cat ctt gca aat cta gaa tgt tca cca aac att 364
 Met Gly His Phe Leu His Leu Ala Asn Leu Glu Cys Ser Pro Asn Ile
 60 65 70
 gaa atg ttc ctt tgc caa gct ttt ata cca acc tgc aca gag caa att 412
 Glu Met Phe Leu Cys Gln Ala Phe Ile Pro Thr Cys Thr Glu Gln Ile
 75 80 85
 cat gta gtt cta ccc tgt cgg aaa ttg tgt gag aaa ata gtt tct gat 460
 His Val Val Leu Pro Cys Arg Lys Leu Cys Glu Lys Ile Val Ser Asp
 90 95 100 105
 tgc aaa aaa cta atg gac act ttt ggc atc cga tgg cct gaa gaa ctt 508
 Cys Lys Lys Leu Met Asp Thr Phe Gly Ile Arg Trp Pro Glu Glu Leu
 110 115 120
 gaa tgt aac aga ttg cca cac tgt gat gac act gtt cct gta act tct 556
 Glu Cys Asn Arg Leu Pro His Cys Asp Asp Thr Val Pro Val Thr Ser
 125 130 135

cat cca cac aca gag ctt tct ggg cca cag aag aaa tca gat caa gtc	604
His Pro His Thr Glu Leu Ser Gly Pro Gln Lys Lys Ser Asp Gln Val	
140 145 150	
cca aga gac att gga ttt tgg tgt cca aag cac ctt agg act tcc ggg	652
Pro Arg Asp Ile Gly Phe Trp Cys Pro Lys His Leu Arg Thr Ser Gly	
155 160 165	
gac caa ggc tat agg ttt ctg gga att gaa cag tgt gcc cct ccg tgc	700
Asp Gln Gly Tyr Arg Phe Leu Gly Ile Glu Gln Cys Ala Pro Pro Cys	
170 175 180 185	
ccc aat atg tat ttt aaa agt gat gaa cta gac ttt gcc aaa agt ttc	748
Pro Asn Met Tyr Phe Lys Ser Asp Glu Leu Asp Phe Ala Lys Ser Phe	
190 195 200	
ata gga ata gtt tca ata ttt tgt ctt tgt gca act ctg ttc acg ttc	796
Ile Gly Ile Val Ser Ile Phe Cys Leu Cys Ala Thr Leu Phe Thr Phe	
205 210 215	
ctt aca ttt tta att gac gtt aga cga ttc aga tac cca gag aga cca	844
Leu Thr Phe Leu Ile Asp Val Arg Arg Phe Arg Tyr Pro Glu Arg Pro	
220 225 230	
att atc tat tac tct gtc tgc tac agc att gtc tct ctc atg tac ttc	892
Ile Ile Tyr Tyr Ser Val Cys Tyr Ser Ile Val Ser Leu Met Tyr Phe	
235 240 245	
gtg ggg ttt ttg ctg ggc aat agc aca gct tgt aat aag gca gac gag	940
Val Gly Phe Leu Leu Gly Asn Ser Thr Ala Cys Asn Lys Ala Asp Glu	
250 255 260 265	
aag ctg gag ctc ggg gac acc gtt gtc cta ggg tca aag aat aag gct	988
Lys Leu Glu Leu Gly Asp Thr Val Val Leu Gly Ser Lys Asn Lys Ala	
270 275 280	
tgc agt gtg gta ttt atg ttt ctg tat ttt ttt aca atg gct ggc acc	1036
Cys Ser Val Val Phe Met Phe Leu Tyr Phe Phe Thr Met Ala Gly Thr	

285	290	295	
gtg tgg tgg gtg att ctc acc att acg tgg ttc tta gct gcc ggg aga			1084
Val Trp Trp Val Ile Leu Thr Ile Thr Trp Phe Leu Ala Ala Gly Arg			
300	305	310	
aaa tgg agt tgc gaa gct att gaa caa aaa gca gtg tgg ttc cat gcc			1132
Lys Trp Ser Cys Glu Ala Ile Glu Gln Lys Ala Val Trp Phe His Ala			
315	320	325	
gtt gcc tgg ggg gcg ccc ggg ttc ctg acc gtc atg ctg ctc gct atg			1180
Val Ala Trp Gly Ala Pro Gly Phe Leu Thr Val Met Leu Leu Ala Met			
330	335	340	345
aat aag gtt gaa gga gac aac att agc ggc gtt tgc ttc gtt ggc ctg			1228
Asn Lys Val Glu Gly Asp Asn Ile Ser Gly Val Cys Phe Val Gly Leu			
350	355	360	
tat gac ctg gac gcc tct cgc tac ttc gtc ctt ctg cct ctg tgc ctc			1276
Tyr Asp Leu Asp Ala Ser Arg Tyr Phe Val Leu Leu Pro Leu Cys Leu			
365	370	375	
tgc gta ttt gtt ggg ctg tct ctc ctc tta gcc ggc atc atc tcc ttg			1324
Cys Val Phe Val Gly Leu Ser Leu Leu Leu Ala Gly Ile Ile Ser Leu			
380	385	390	
aat cat gtc cga caa gtc ata cag cat gat ggt cgg aac caa gag aag			1372
Asn His Val Arg Gln Val Ile Gln His Asp Gly Arg Asn Gln Glu Lys			
395	400	405	
cta aag aaa ttc atg att cgc atc gga gtc ttc agt ggc ctg tat ctt			1420
Leu Lys Lys Phe Met Ile Arg Ile Gly Val Phe Ser Gly Leu Tyr Leu			
410	415	420	425
gtg ccc tta gtg aca ctt ctc ggt tgc tat gtc tat gag cta gtg aac			1468
Val Pro Leu Val Thr Leu Leu Gly Cys Tyr Val Tyr Glu Leu Val Asn			
430	435	440	
agg atc acc tgg gag atg aca tgg ttc tct gat cat tgt cac cag tac			1516

Arg Ile Thr Trp Glu Met Thr Trp Phe Ser Asp His Cys His Gln Tyr	
445	450
455	
cgc atc ccg tgc cct tac cag gca aat cca aaa gct cga cca gaa ttg	1564
Arg Ile Pro Cys Pro Tyr Gln Ala Asn Pro Lys Ala Arg Pro Glu Leu	
460	465
470	
gct tta ttt atg ata aaa tat ctg atg aca tta att gtt ggt atc tct	1612
Ala Leu Phe Met Ile Lys Tyr Leu Met Thr Leu Ile Val Gly Ile Ser	
475	480
485	
gcg gtc ttc tgg gtt gga agc aaa aag acg tgc aca gaa tgg gcc ggg	1660
Ala Val Phe Trp Val Gly Ser Lys Lys Thr Cys Thr Glu Trp Ala Gly	
490	495
500	505
ttc ttt aag cga aac cgc aag cga gac ccc atc agt gag agc cgc cga	1708
Phe Phe Lys Arg Asn Arg Lys Arg Asp Pro Ile Ser Glu Ser Arg Arg	
510	515
520	
gtg ctg caa gag tcc tgt gag ttc ttc ctg aag cac aac tct aaa gtg	1756
Val Leu Gln Glu Ser Cys Glu Phe Phe Leu Lys His Asn Ser Lys Val	
525	530
535	
aag cac aag aag aag cat ggc gca cca ggg cct cat agg ctg aag gtc	1804
Lys His Lys Lys Lys His Gly Ala Pro Gly Pro His Arg Leu Lys Val	
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550	
att tcc aag tcc atg gga act agc aca gga gcg acc aca aat cat ggc	1852
Ile Ser Lys Ser Met Gly Thr Ser Thr Gly Ala Thr Thr Asn His Gly	
555	560
565	
acc tct gcc atg gca atc gct gac cat gat tac tta ggg caa gaa act	1900
Thr Ser Ala Met Ala Ile Ala Asp His Asp Tyr Leu Gly Gln Glu Thr	
570	575
580	585
tca aca gaa gtc cac acc tcc cca gaa gca tcc gtc aaa gag gga cga	1948
Ser Thr Glu Val His Thr Ser Pro Glu Ala Ser Val Lys Glu Gly Arg	
590	595
600	

gca gac cga gca aac act ccc agc gcc aaa gat cgg gac tgt ggg gaa 1996
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 tct gca ggg ccc agt tcc aag ctc tct ggg aac cgg aac ggc agg gaa 2044
 Ser Ala Gly Pro Ser Ser Lys Leu Ser Gly Asn Arg Asn Gly Arg Glu
 620 625 630
 agc cga gcg ggc ggc ctg aag gag aga agc aat gga tca gag ggg gct 2092
 Ser Arg Ala Gly Gly Leu Lys Glu Arg Ser Asn Gly Ser Glu Gly Ala
 635 640 645
 cca agt gaa gga agg gta agt cca aag agc agc gtt cct gag act ggc 2140
 Pro Ser Glu Gly Arg Val Ser Pro Lys Ser Ser Val Pro Glu Thr Gly
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 ctg ata gac tgc agc act tca cag gcc gcc agt tct cca gaa cca acc 2188
 Leu Ile Asp Cys Ser Thr Ser Gln Ala Ala Ser Ser Pro Glu Pro Thr
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 Ser Leu Lys Gly Ser Thr Ser Leu Pro Val His Ser Ala Ser Arg Ala
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<210> 883

<211> 709

<212> PRT

<213> Mus musculus

<400> 883

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Met Lys Met Thr Tyr Asn Met Thr Phe Phe Pro Asn Leu Met Gly His
          35             40             45
Tyr Asp Gln Gly Ile Ala Ala Val Glu Met Gly His Phe Leu His Leu
          50             55             60
Ala Asn Leu Glu Cys Ser Pro Asn Ile Glu Met Phe Leu Cys Gln Ala
          65             70             75             80
Phe Ile Pro Thr Cys Thr Glu Gln Ile His Val Val Leu Pro Cys Arg
          85             90             95
Lys Leu Cys Glu Lys Ile Val Ser Asp Cys Lys Lys Leu Met Asp Thr
          100            105            110
Phe Gly Ile Arg Trp Pro Glu Glu Leu Glu Cys Asn Arg Leu Pro His
          115            120            125
Cys Asp Asp Thr Val Pro Val Thr Ser His Pro His Thr Glu Leu Ser
          130            135            140
Gly Pro Gln Lys Lys Ser Asp Gln Val Pro Arg Asp Ile Gly Phe Trp
          145            150            155            160
Cys Pro Lys His Leu Arg Thr Ser Gly Asp Gln Gly Tyr Arg Phe Leu
          165            170            175
Gly Ile Glu Gln Cys Ala Pro Pro Cys Pro Asn Met Tyr Phe Lys Ser
          180            185            190
Asp Glu Leu Asp Phe Ala Lys Ser Phe Ile Gly Ile Val Ser Ile Phe
          195            200            205

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 245 250 255
 Ser Thr Ala Cys Asn Lys Ala Asp Glu Lys Leu Glu Leu Gly Asp Thr
 260 265 270
 Val Val Leu Gly Ser Lys Asn Lys Ala Cys Ser Val Val Phe Met Phe
 275 280 285
 Leu Tyr Phe Phe Thr Met Ala Gly Thr Val Trp Trp Val Ile Leu Thr
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 Ile Thr Trp Phe Leu Ala Ala Gly Arg Lys Trp Ser Cys Glu Ala Ile
 305 310 315 320
 Glu Gln Lys Ala Val Trp Phe His Ala Val Ala Trp Gly Ala Pro Gly
 325 330 335
 Phe Leu Thr Val Met Leu Leu Ala Met Asn Lys Val Glu Gly Asp Asn
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 Ile Ser Gly Val Cys Phe Val Gly Leu Tyr Asp Leu Asp Ala Ser Arg
 355 360 365
 Tyr Phe Val Leu Leu Pro Leu Cys Leu Cys Val Phe Val Gly Leu Ser
 370 375 380
 Leu Leu Leu Ala Gly Ile Ile Ser Leu Asn His Val Arg Gln Val Ile
 385 390 395 400
 Gln His Asp Gly Arg Asn Gln Glu Lys Leu Lys Lys Phe Met Ile Arg
 405 410 415
 Ile Gly Val Phe Ser Gly Leu Tyr Leu Val Pro Leu Val Thr Leu Leu
 420 425 430
 Gly Cys Tyr Val Tyr Glu Leu Val Asn Arg Ile Thr Trp Glu Met Thr

435	440	445
Trp Phe Ser Asp His Cys His Gln Tyr Arg Ile Pro Cys Pro Tyr Gln		
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Ala Asn Pro Lys Ala Arg Pro Glu Leu Ala Leu Phe Met Ile Lys Tyr		
465	470	475
Leu Met Thr Leu Ile Val Gly Ile Ser Ala Val Phe Trp Val Gly Ser		
485	490	495
Lys Lys Thr Cys Thr Glu Trp Ala Gly Phe Phe Lys Arg Asn Arg Lys		
500	505	510
Arg Asp Pro Ile Ser Glu Ser Arg Arg Val Leu Gln Glu Ser Cys Glu		
515	520	525
Phe Phe Leu Lys His Asn Ser Lys Val Lys His Lys Lys Lys His Gly		
530	535	540
Ala Pro Gly Pro His Arg Leu Lys Val Ile Ser Lys Ser Met Gly Thr		
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Ser Thr Gly Ala Thr Thr Asn His Gly Thr Ser Ala Met Ala Ile Ala		
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Asp His Asp Tyr Leu Gly Gln Glu Thr Ser Thr Glu Val His Thr Ser		
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Pro Glu Ala Ser Val Lys Glu Gly Arg Ala Asp Arg Ala Asn Thr Pro		
595	600	605
Ser Ala Lys Asp Arg Asp Cys Gly Glu Ser Ala Gly Pro Ser Ser Lys		
610	615	620
Leu Ser Gly Asn Arg Asn Gly Arg Glu Ser Arg Ala Gly Gly Leu Lys		
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Glu Arg Ser Asn Gly Ser Glu Gly Ala Pro Ser Glu Gly Arg Val Ser		
645	650	655
Pro Lys Ser Ser Val Pro Glu Thr Gly Leu Ile Asp Cys Ser Thr Ser		
660	665	670

Gln Ala Ala Ser Ser Pro Glu Pro Thr Ser Leu Lys Gly Ser Thr Ser

675

680

685

Leu Pro Val His Ser Ala Ser Arg Ala Arg Lys Glu Gln Gly Ala Gly

690

695

700

Ser His Ser Asp Ala

705

<210> 884

<211> 1402

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (192).. (950)

<400> 884

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ctccccggcc acgggacgcg gtgcacccg gcgaggggtgc agcccccgga gcggcggcgg 180

cggcgggaaa a atg aag aac gaa att gcg gct gtt gtc ttc ttt ttc aca 230

Met Lys Asn Glu Ile Ala Ala Val Val Phe Phe Phe Thr

1

5

10

agg cta gtt cga aag cat gac aag ttg aaa aaa gaa gca gtt gag agg 278

Arg Leu Val Arg Lys His Asp Lys Leu Lys Lys Glu Ala Val Glu Arg

15

20

25

ttt gct gag aaa tta act caa ata ctt caa gag aaa tat aaa aat cac 326

Phe Ala Glu Lys Leu Thr Gln Ile Leu Gln Glu Lys Tyr Lys Asn His

30

35

40

45

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Trp Tyr Pro Glu Lys Pro Ser Lys Gly Gln Ala Tyr Arg Cys Ile Arg	
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gtc aat aag ttt cag aga gtt gat ccc gat gtc ctg aaa gcc tgt gag	422
Val Asn Lys Phe Gln Arg Val Asp Pro Asp Val Leu Lys Ala Cys Glu	
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aac agc tgc atc ttg tac agc gac ctg ggc ttg cct aag gag ctt aca	470
Asn Ser Cys Ile Leu Tyr Ser Asp Leu Gly Leu Pro Lys Glu Leu Thr	
80 85 90	
ctc tgg gtg gat ccg tgt gag gtg tgc tgc cgg tat gga gag aaa aac	518
Leu Trp Val Asp Pro Cys Glu Val Cys Cys Arg Tyr Gly Glu Lys Asn	
95 100 105	
aat gcg ttc att gtt gcc agc ttt gaa aat gag gac gag aac aag gat	566
Asn Ala Phe Ile Val Ala Ser Phe Glu Asn Glu Asp Glu Asn Lys Asp	
110 115 120 125	
gaa atc tcc aag aaa gtt agc agg gct ctg gat aag gtg acc tct gat	614
Glu Ile Ser Lys Lys Val Ser Arg Ala Leu Asp Lys Val Thr Ser Asp	
130 135 140	
tat cac tca ggg tcc tct tcc tca gat gaa gac aca agc aag gaa gtg	662
Tyr His Ser Gly Ser Ser Ser Ser Asp Glu Asp Thr Ser Lys Glu Val	
145 150 155	
gac gtg aaa ccc agc tca gtg gcg gca aca cca agc ccc gtg tac cag	710
Asp Val Lys Pro Ser Ser Val Ala Ala Thr Pro Ser Pro Val Tyr Gln	
160 165 170	
att tca gaa ctg ata ttc cca cct ctt cca atg tgg cac cct ttg ccc	758
Ile Ser Glu Leu Ile Phe Pro Pro Leu Pro Met Trp His Pro Leu Pro	
175 180 185	
aga aaa aag cca gga atg tat cga ggg agc ggc cat cag act cac tac	806
Arg Lys Lys Pro Gly Met Tyr Arg Gly Ser Gly His Gln Thr His Tyr	

190 195 200 205
 cct cct cct gtt cca ttt gct tat cca aat cca gga agg aag aat aaa 854
 Pro Pro Pro Val Pro Phe Ala Tyr Pro Asn Pro Gly Arg Lys Asn Lys
 210 215 220
 cca ttc cgc cca att cca gtg aca tgg gta cct cct cct gga atg cat 902
 Pro Phe Arg Pro Ile Pro Val Thr Trp Val Pro Pro Pro Gly Met His
 225 230 235
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 Cys Asp Arg Asn His Trp Ile Asn Pro His Met Leu Ala Pro His
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 agagttcata cttgtagtga agttagatgg gcaaaacat cagacttatt tttatagaaa 1070
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 ttgatatagt ttgagaaact ttattaaagt tagtcaagtg cctgagtttt taatatigga 1190
 cttgagtatt tatatattgt gcattgactc tgttggatac aaaaacactg taggagcggg 1250
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<211> 252

<212> PRT

<213> Mus musculus

<400> 885

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30

Lys Leu Thr Gln Ile Leu Gln Glu Lys Tyr Lys Asn His Trp Tyr Pro
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 Glu Lys Pro Ser Lys Gly Gln Ala Tyr Arg Cys Ile Arg Val Asn Lys
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 Phe Gln Arg Val Asp Pro Asp Val Leu Lys Ala Cys Glu Asn Ser Cys
 65 70 75 80
 Ile Leu Tyr Ser Asp Leu Gly Leu Pro Lys Glu Leu Thr Leu Trp Val
 85 90 95
 Asp Pro Cys Glu Val Cys Cys Arg Tyr Gly Glu Lys Asn Asn Ala Phe
 100 105 110
 Ile Val Ala Ser Phe Glu Asn Glu Asp Glu Asn Lys Asp Glu Ile Ser
 115 120 125
 Lys Lys Val Ser Arg Ala Leu Asp Lys Val Thr Ser Asp Tyr His Ser
 130 135 140
 Gly Ser Ser Ser Ser Asp Glu Asp Thr Ser Lys Glu Val Asp Val Lys
 145 150 155 160
 Pro Ser Ser Val Ala Ala Thr Pro Ser Pro Val Tyr Gln Ile Ser Glu
 165 170 175
 Leu Ile Phe Pro Pro Leu Pro Met Trp His Pro Leu Pro Arg Lys Lys
 180 185 190
 Pro Gly Met Tyr Arg Gly Ser Gly His Gln Thr His Tyr Pro Pro Pro
 195 200 205
 Val Pro Phe Ala Tyr Pro Asn Pro Gly Arg Lys Asn Lys Pro Phe Arg
 210 215 220
 Pro Ile Pro Val Thr Trp Val Pro Pro Pro Gly Met His Cys Asp Arg
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 Asn His Trp Ile Asn Pro His Met Leu Ala Pro His
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<210> 886

<211> 2965

<212> DNA

<213> Mus musculus

<220>

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<222> (595).. (2832)

<400> 886

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 gtgggaaccg tagtgctctg caccggagtg tggatgagtt gaagtgtgctt tccccgggct 180
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 agagtttgaa gtctttacag gcgggaagat ggccgactgg agctgaaagt gttgattggg 540
 aaacttgggt gattcttctg ttatattaca atcctcttga cccaggcagg acac atg 597

Met

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cag gcc aaa aaa cgc tat ttc atc ctg ctc tca gct ggc tct tct ctc 645
 Gln Ala Lys Lys Arg Tyr Phe Ile Leu Leu Ser Ala Gly Ser Ser Leu

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gcc ctt ttg ttt tat ttt gga ggc gtg cag ttt agg gca tcg agg agc 693
 Ala Leu Leu Phe Tyr Phe Gly Gly Val Gln Phe Arg Ala Ser Arg Ser

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25

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cac agc cgg aga gaa gag cac agt ggt cgg aat ggc ttg cac cag ccc 741

His Ser Arg Arg Glu Glu His Ser Gly Arg Asn Gly Leu His Gln Pro
 35 40 45
 agt ccg gat cat ttc tgg ccc cgc ttc ccg gag cct ctg cgc ccc ttc 789
 Ser Pro Asp His Phe Trp Pro Arg Phe Pro Glu Pro Leu Arg Pro Phe
 50 55 60 65
 ttt cct tgg gat caa ttg gaa aac gag gat tcc agc gtg cac att tcc 837
 Phe Pro Trp Asp Gln Leu Glu Asn Glu Asp Ser Ser Val His Ile Ser
 70 75 80
 ccc cgg cag aag cga gac gcc aac tcg agc atc tac aaa ggc aag aag 885
 Pro Arg Gln Lys Arg Asp Ala Asn Ser Ser Ile Tyr Lys Gly Lys Lys
 85 90 95
 tgc cgc atg gag tcc tgc ttc gat ttc acc ctt tgc aag aaa aac ggc 933
 Cys Arg Met Glu Ser Cys Phe Asp Phe Thr Leu Cys Lys Lys Asn Gly
 100 105 110
 ttc aaa gtc tac gtg tac ccg cag cag aaa ggg gag aaa atc gcc gaa 981
 Phe Lys Val Tyr Val Tyr Pro Gln Gln Lys Gly Glu Lys Ile Ala Glu
 115 120 125
 agt tac caa aac att cta gcg gcc atc gag ggc tcc agg ttc tac acc 1029
 Ser Tyr Gln Asn Ile Leu Ala Ala Ile Glu Gly Ser Arg Phe Tyr Thr
 130 135 140 145
 tcg gac ccc agc cag gcg tgc ctc ttt gtc ttg agt ctg gat act tta 1077
 Ser Asp Pro Ser Gln Ala Cys Leu Phe Val Leu Ser Leu Asp Thr Leu
 150 155 160
 gac aga gac cag tta tca cct cag tat gtg cac aat ttg aga tcc aaa 1125
 Asp Arg Asp Gln Leu Ser Pro Gln Tyr Val His Asn Leu Arg Ser Lys
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 gtg cag agt ctc cac ttg tgg aac aat ggt agg aat cat tta att ttt 1173
 Val Gln Ser Leu His Leu Trp Asn Asn Gly Arg Asn His Leu Ile Phe
 180 185 190

aat tta tat tct ggc act tgg cct gac tac act gag gac gtg ggg ttt 1221
 Asn Leu Tyr Ser Gly Thr Trp Pro Asp Tyr Thr Glu Asp Val Gly Phe
 195 200 205
 gac atc ggc cag gcg atg ctg gcc aaa gcc acg atc agt act gaa aac 1269
 Asp Ile Gly Gln Ala Met Leu Ala Lys Ala Thr Ile Ser Thr Glu Asn
 210 215 220 225
 ttc cga cca aac ttt gat gtt tct att ccc ctc ttt tct aag gat cat 1317
 Phe Arg Pro Asn Phe Asp Val Ser Ile Pro Leu Phe Ser Lys Asp His
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 ccc agg aca gga ggg gag agg ggg ttt ttg aaa ttt aac acc atc cct 1365
 Pro Arg Thr Gly Gly Glu Arg Gly Phe Leu Lys Phe Asn Thr Ile Pro
 245 250 255
 cct ctc agg aag tac atg ctg gta ttc aag ggg aag cgg tac ctg aca 1413
 Pro Leu Arg Lys Tyr Met Leu Val Phe Lys Gly Lys Arg Tyr Leu Thr
 260 265 270
 ggg ata ggg tca gac acc agg aat gcc tta tat cac gtc cat aac ggg 1461
 Gly Ile Gly Ser Asp Thr Arg Asn Ala Leu Tyr His Val His Asn Gly
 275 280 285
 gag gac gtc ttg ctc ctc acc acc tgc aag cat ggc aaa gac tgg caa 1509
 Glu Asp Val Leu Leu Leu Thr Thr Cys Lys His Gly Lys Asp Trp Gln
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 aag cac aag gat tct cgc tgt gac aga gac aac acc gag tat gag aaa 1557
 Lys His Lys Asp Ser Arg Cys Asp Arg Asp Asn Thr Glu Tyr Glu Lys
 310 315 320
 tat gat tat cgg gaa atg ctg cac aat gcc act ttc tgt ctg gtt cct 1605
 Tyr Asp Tyr Arg Glu Met Leu His Asn Ala Thr Phe Cys Leu Val Pro
 325 330 335
 cgt ggt cgc agg ctt ggg tcc ttc aga ttc ctg gag gct ttg cag gct 1653
 Arg Gly Arg Arg Leu Gly Ser Phe Arg Phe Leu Glu Ala Leu Gln Ala

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Ala Cys Val Pro Val Met Leu Ser Asn Gly Trp Glu Leu Pro Phe Ser			
355	360	365	
gaa gtg att aat tgg aac caa gct gcc gtc ata ggc gat gag aga ttg	1749		
Glu Val Ile Asn Trp Asn Gln Ala Ala Val Ile Gly Asp Glu Arg Leu			
370	375	380	385
cta tta cag att cct tct aca atc agg tct att cat cag gat aaa atc	1797		
Leu Leu Gln Ile Pro Ser Thr Ile Arg Ser Ile His Gln Asp Lys Ile			
390	395	400	
cta gca ctt aga cag cag aca cag ttc ttg tgg gag gct tat ttt tct	1845		
Leu Ala Leu Arg Gln Gln Thr Gln Phe Leu Trp Glu Ala Tyr Phe Ser			
405	410	415	
tca gtt gag aag att gta tta act aca cta gag att att cag gac aga	1893		
Ser Val Glu Lys Ile Val Leu Thr Thr Leu Glu Ile Ile Gln Asp Arg			
420	425	430	
ata ttc aag cac ata tca cgt aac agt tta ata tgg aac aaa cat cct	1941		
Ile Phe Lys His Ile Ser Arg Asn Ser Leu Ile Trp Asn Lys His Pro			
435	440	445	
gga gga ttg ttc gtc cta ccg cag tat tca tct tac ctg gga gat ttc	1989		
Gly Gly Leu Phe Val Leu Pro Gln Tyr Ser Ser Tyr Leu Gly Asp Phe			
450	455	460	465
cct tac tac tat gct aat tta ggt tta aag ccc ccc tcc aaa ttc act	2037		
Pro Tyr Tyr Tyr Ala Asn Leu Gly Leu Lys Pro Pro Ser Lys Phe Thr			
470	475	480	
gca gtc atc cat cct gtg act ccc ctg gtc tct cag tcc cag cca gtg	2085		
Ala Val Ile His Pro Val Thr Pro Leu Val Ser Gln Ser Gln Pro Val			
485	490	495	
ttg aag ctt ctt gtg gct gca gcc aaa tcc cag tac tgt gcg cag atc	2133		

Leu Lys Leu Leu Val Ala Ala Ala Lys Ser Gln Tyr Cys Ala Gln Ile
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 ata gtt ctg tgg aat tgt gac aag cct cta cca gcc aaa cat cgc tgg 2181
 Ile Val Leu Trp Asn Cys Asp Lys Pro Leu Pro Ala Lys His Arg Trp
 515 520 525
 cct gcc act gcc gtg cct gtc atc gtc att gaa gga gaa agc aag gtt 2229
 Pro Ala Thr Ala Val Pro Val Ile Val Ile Glu Gly Glu Ser Lys Val
 530 535 540 545
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 Met Ser Arg Phe Leu Pro Tyr Asp Asn Ile Ile Thr Asp Ala Val Leu
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 agc ctg gat gag gac act gtg ctt tca act acg gaa gtg gat ttt gcc 2325
 Ser Leu Asp Glu Asp Thr Val Leu Ser Thr Thr Glu Val Asp Phe Ala
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 Phe Thr Val Trp Gln Ser Phe Pro Glu Arg Ile Val Gly Tyr Pro Ala
 580 585 590
 cgc agt cat ttc tgg gat aac tca aag gag cgg tgg gga tat aca tcc 2421
 Arg Ser His Phe Trp Asp Asn Ser Lys Glu Arg Trp Gly Tyr Thr Ser
 595 600 605
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 Lys Trp Thr Asn Asp Tyr Ser Met Val Leu Thr Gly Ala Ala Ile Tyr
 610 615 620 625
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 His Lys Tyr Tyr His Tyr Leu Tyr Ser His Tyr Leu Pro Ala Ser Leu
 630 635 640
 aag aac atg gta gac caa ctg gcc aac tgt gag gac att ctc atg aat 2565
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 645 650 655

ttc ctg gtg tct gct gtg aca aaa ttg cct cca atc aaa gtg acc cag 2613
 Phe Leu Val Ser Ala Val Thr Lys Leu Pro Pro Ile Lys Val Thr Gln
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 Lys Lys Gln Tyr Lys Glu Thr Met Met Gly Gln Thr Ser Arg Ala Ser
 675 680 685
 cgc tgg gcc gac cct gac cac ttt gcc cag cga cag agc tgc atg aat 2709
 Arg Trp Ala Asp Pro Asp His Phe Ala Gln Arg Gln Ser Cys Met Asn
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 Thr Phe Ala Ser Trp Phe Gly Tyr Met Pro Leu Ile His Ser Gln Met
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 Arg Leu Asp Pro Val Leu Phe Lys Asp Gln Val Ser Ile Leu Arg Lys
 725 730 735
 aaa tac aga gac att gaa cga ctt tga ggaagccgac cgagtggggg 2852
 Lys Tyr Arg Asp Ile Glu Arg Leu
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<211> 745

<212> PRT

<213> Mus musculus

<400> 887

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 Pro Ser Pro Asp His Phe Trp Pro Arg Phe Pro Glu Pro Leu Arg Pro
 50 55 60
 Phe Phe Pro Trp Asp Gln Leu Glu Asn Glu Asp Ser Ser Val His Ile
 65 70 75 80
 Ser Pro Arg Gln Lys Arg Asp Ala Asn Ser Ser Ile Tyr Lys Gly Lys
 85 90 95
 Lys Cys Arg Met Glu Ser Cys Phe Asp Phe Thr Leu Cys Lys Lys Asn
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 Gly Phe Lys Val Tyr Val Tyr Pro Gln Gln Lys Gly Glu Lys Ile Ala
 115 120 125
 Glu Ser Tyr Gln Asn Ile Leu Ala Ala Ile Glu Gly Ser Arg Phe Tyr
 130 135 140
 Thr Ser Asp Pro Ser Gln Ala Cys Leu Phe Val Leu Ser Leu Asp Thr
 145 150 155 160
 Leu Asp Arg Asp Gln Leu Ser Pro Gln Tyr Val His Asn Leu Arg Ser
 165 170 175
 Lys Val Gln Ser Leu His Leu Trp Asn Asn Gly Arg Asn His Leu Ile
 180 185 190
 Phe Asn Leu Tyr Ser Gly Thr Trp Pro Asp Tyr Thr Glu Asp Val Gly
 195 200 205
 Phe Asp Ile Gly Gln Ala Met Leu Ala Lys Ala Thr Ile Ser Thr Glu
 210 215 220
 Asn Phe Arg Pro Asn Phe Asp Val Ser Ile Pro Leu Phe Ser Lys Asp
 225 230 235 240
 His Pro Arg Thr Gly Gly Glu Arg Gly Phe Leu Lys Phe Asn Thr Ile

	245		250		255										
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	260		265		270										
Thr	Gly	Ile	Gly	Ser	Asp	Thr	Arg	Asn	Ala	Leu	Tyr	His	Val	His	Asn
	275		280		285										
Gly	Glu	Asp	Val	Leu	Leu	Leu	Thr	Thr	Cys	Lys	His	Gly	Lys	Asp	Trp
	290		295		300										
Gln	Lys	His	Lys	Asp	Ser	Arg	Cys	Asp	Arg	Asp	Asn	Thr	Glu	Tyr	Glu
305			310		315										320
Lys	Tyr	Asp	Tyr	Arg	Glu	Met	Leu	His	Asn	Ala	Thr	Phe	Cys	Leu	Val
	325		330		335										
Pro	Arg	Gly	Arg	Arg	Leu	Gly	Ser	Phe	Arg	Phe	Leu	Glu	Ala	Leu	Gln
	340		345		350										
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	355		360		365										
Ser	Glu	Val	Ile	Asn	Trp	Asn	Gln	Ala	Ala	Val	Ile	Gly	Asp	Glu	Arg
	370		375		380										
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385			390		395										400
Ile	Leu	Ala	Leu	Arg	Gln	Gln	Thr	Gln	Phe	Leu	Trp	Glu	Ala	Tyr	Phe
	405		410		415										
Ser	Ser	Val	Glu	Lys	Ile	Val	Leu	Thr	Thr	Leu	Glu	Ile	Ile	Gln	Asp
	420		425		430										
Arg	Ile	Phe	Lys	His	Ile	Ser	Arg	Asn	Ser	Leu	Ile	Trp	Asn	Lys	His
	435		440		445										
Pro	Gly	Gly	Leu	Phe	Val	Leu	Pro	Gln	Tyr	Ser	Ser	Tyr	Leu	Gly	Asp
	450		455		460										
Phe	Pro	Tyr	Tyr	Tyr	Ala	Asn	Leu	Gly	Leu	Lys	Pro	Pro	Ser	Lys	Phe
465			470		475										480

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 Val Leu Lys Leu Leu Val Ala Ala Ala Lys Ser Gln Tyr Cys Ala Gln
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 Ile Ile Val Leu Trp Asn Cys Asp Lys Pro Leu Pro Ala Lys His Arg
 515 520 525
 Trp Pro Ala Thr Ala Val Pro Val Ile Val Ile Glu Gly Glu Ser Lys
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 Val Met Ser Arg Phe Leu Pro Tyr Asp Asn Ile Ile Thr Asp Ala Val
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 580 585 590
 Ala Arg Ser His Phe Trp Asp Asn Ser Lys Glu Arg Trp Gly Tyr Thr
 595 600 605
 Ser Lys Trp Thr Asn Asp Tyr Ser Met Val Leu Thr Gly Ala Ala Ile
 610 615 620
 Tyr His Lys Tyr Tyr His Tyr Leu Tyr Ser His Tyr Leu Pro Ala Ser
 625 630 635 640
 Leu Lys Asn Met Val Asp Gln Leu Ala Asn Cys Glu Asp Ile Leu Met
 645 650 655
 Asn Phe Leu Val Ser Ala Val Thr Lys Leu Pro Pro Ile Lys Val Thr
 660 665 670
 Gln Lys Lys Gln Tyr Lys Glu Thr Met Met Gly Gln Thr Ser Arg Ala
 675 680 685
 Ser Arg Trp Ala Asp Pro Asp His Phe Ala Gln Arg Gln Ser Cys Met
 690 695 700
 Asn Thr Phe Ala Ser Trp Phe Gly Tyr Met Pro Leu Ile His Ser Gln

705 710 715 720
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<210> 888

<211> 1933

<212> DNA

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<220>

<221> CDS

<222> (140).. (1243)

<400> 888

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Met Val Met Glu Val Gly Ile Leu Asp Ala Gly

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ggg ctg cgc gcg ctg ctg cga gag ggc gcc gcg cag tgc ctg ttg ttg 220
 Gly Leu Arg Ala Leu Leu Arg Glu Gly Ala Ala Gln Cys Leu Leu Leu

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25

gat tgt cgc tcc ttc ttc gct ttc aac gcc ggc cac atc gcg ggc ica 268
 Asp Cys Arg Ser Phe Phe Ala Phe Asn Ala Gly His Ile Ala Gly Ser

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35

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gtg aac gtg cgc ttc agc acc atc gtg cgg cgc cgc gcc aag ggc gcc 316
 Val Asn Val Arg Phe Ser Thr Ile Val Arg Arg Arg Ala Lys Gly Ala

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Met Gly Leu Glu His Ile Val Pro Asn Ala Glu Leu Arg Gly Arg Leu			
60	65	70	75
ctg gcc gga gcc tac cac gcc gtg gtg ctg ctg gac gag cgc agc gcc	412		
Leu Ala Gly Ala Tyr His Ala Val Val Leu Leu Asp Glu Arg Ser Ala			
80	85	90	
tcc ctg gac ggc gcc aag cgc gac ggc acc ctg gcc ctg gcc gcg ggc	460		
Ser Leu Asp Gly Ala Lys Arg Asp Gly Thr Leu Ala Leu Ala Ala Gly			
95	100	105	
gcg ctc tgc cga gag gcg cgc tcc act caa gtc ttc ttt ctc caa gga	508		
Ala Leu Cys Arg Glu Ala Arg Ser Thr Gln Val Phe Phe Leu Gln Gly			
110	115	120	
gga tat gaa gcg ttt tcg gct tcc tgc cct gag ctg tgc agc aaa cag	556		
Gly Tyr Glu Ala Phe Ser Ala Ser Cys Pro Glu Leu Cys Ser Lys Gln			
125	130	135	
tcc acc ccc acg ggg ctc agc ctc ccc ctg agt act agt gtg cct gac	604		
Ser Thr Pro Thr Gly Leu Ser Leu Pro Leu Ser Thr Ser Val Pro Asp			
140	145	150	155
agt gca gaa tcc gga tgc agc tcc tgt agt acc cct ctc tac gat cag	652		
Ser Ala Glu Ser Gly Cys Ser Ser Cys Ser Thr Pro Leu Tyr Asp Gln			
160	165	170	
ggg ggc cca gtg gag atc ctg tcc ttc ctg tac ctg ggc agt gcc tat	700		
Gly Gly Pro Val Glu Ile Leu Ser Phe Leu Tyr Leu Gly Ser Ala Tyr			
175	180	185	
cac gct tct cgg aag gat atg ctt gac gcc ttg ggc atc acc gcc ttg	748		
His Ala Ser Arg Lys Asp Met Leu Asp Ala Leu Gly Ile Thr Ala Leu			
190	195	200	
atc aac gtc tca gcc aat tgt cct aac cac ttt gag ggt cac tac cag	796		

Ile Asn Val Ser Ala Asn Cys Pro Asn His Phe Glu Gly His Tyr Gln	
205	210
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Tyr Lys Ser Ile Pro Val Glu Asp Asn His Lys Ala Asp Ile Ser Ser	
220	225
230	235
tgg ttc aac gag gct att gac ttc ata gac tcc atc aag gat gct gga	892
Trp Phe Asn Glu Ala Ile Asp Phe Ile Asp Ser Ile Lys Asp Ala Gly	
240	245
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Gly Arg Val Phe Val His Cys Gln Ala Gly Ile Ser Arg Ser Ala Thr	
255	260
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atc tgc ctt gct tac ctc atg agg act aac cgg gta aag ctg gac gag	988
Ile Cys Leu Ala Tyr Leu Met Arg Thr Asn Arg Val Lys Leu Asp Glu	
270	275
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Ala Phe Glu Phe Val Lys Gln Arg Arg Ser Ile Ile Ser Pro Asn Phe	
285	290
295	
agc ttc atg ggc cag ctg ctg cag ttt gag tcc caa gtg cta gcc cct	1084
Ser Phe Met Gly Gln Leu Leu Gln Phe Glu Ser Gln Val Leu Ala Pro	
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310	315
cac tgc tct gct gaa gct ggg agc cct gcc atg gct gtc ctt gac cgg	1132
His Cys Ser Ala Glu Ala Gly Ser Pro Ala Met Ala Val Leu Asp Arg	
320	325
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345	
cac ccc acg aac agt gcc ctg aac tac ctt aaa agc ccc atc acc acc	1228
His Pro Thr Asn Ser Ala Leu Asn Tyr Leu Lys Ser Pro Ile Thr Thr	
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360	

tct cca agc tgc tga agggcaaggg gaggtgtgga gtttcacttg ccaccgggtc 1283
Ser Pro Ser Cys

365

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<210> 889

<211> 367

<212> PRT

<213> Mus musculus

<400> 889

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Phe	Ala	Phe	Asn	Ala	Gly	His	Ile	Ala	Gly	Ser	Val	Asn	Val	Arg	Phe
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Ser	Thr	Ile	Val	Arg	Arg	Arg	Ala	Lys	Gly	Ala	Met	Gly	Leu	Glu	His
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Ile Val Pro Asn Ala Glu Leu Arg Gly Arg Leu Leu Ala Gly Ala Tyr
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 His Ala Val Val Leu Leu Asp Glu Arg Ser Ala Ser Leu Asp Gly Ala
 85 90 95
 Lys Arg Asp Gly Thr Leu Ala Leu Ala Ala Gly Ala Leu Cys Arg Glu
 100 105 110
 Ala Arg Ser Thr Gln Val Phe Phe Leu Gln Gly Gly Tyr Glu Ala Phe
 115 120 125
 Ser Ala Ser Cys Pro Glu Leu Cys Ser Lys Gln Ser Thr Pro Thr Gly
 130 135 140
 Leu Ser Leu Pro Leu Ser Thr Ser Val Pro Asp Ser Ala Glu Ser Gly
 145 150 155 160
 Cys Ser Ser Cys Ser Thr Pro Leu Tyr Asp Gln Gly Gly Pro Val Glu
 165 170 175
 Ile Leu Ser Phe Leu Tyr Leu Gly Ser Ala Tyr His Ala Ser Arg Lys
 180 185 190
 Asp Met Leu Asp Ala Leu Gly Ile Thr Ala Leu Ile Asn Val Ser Ala
 195 200 205
 Asn Cys Pro Asn His Phe Glu Gly His Tyr Gln Tyr Lys Ser Ile Pro
 210 215 220
 Val Glu Asp Asn His Lys Ala Asp Ile Ser Ser Trp Phe Asn Glu Ala
 225 230 235 240
 Ile Asp Phe Ile Asp Ser Ile Lys Asp Ala Gly Gly Arg Val Phe Val
 245 250 255
 His Cys Gln Ala Gly Ile Ser Arg Ser Ala Thr Ile Cys Leu Ala Tyr
 260 265 270
 Leu Met Arg Thr Asn Arg Val Lys Leu Asp Glu Ala Phe Glu Phe Val
 275 280 285
 Lys Gln Arg Arg Ser Ile Ile Ser Pro Asn Phe Ser Phe Met Gly Gln

290	295	300	
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305	310	315	320
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	325	330	335
Thr Val Phe Asn Phe Pro Val Ser Ile Pro Val His Pro Thr Asn Ser			
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<211> 2089

<212> DNA

<213> Mus musculus

<400> 890

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<210> 891

<211> 2728

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (49).. (1179)

<220>

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<222> (208).. (846)

<400> 891

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Ala Ser Val Leu Leu Leu Ala Gly Leu Cys Ser Leu Ser Gln Gly Gln

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15

tat gat gaa gac tct cac tgg tgg atc caa tac ctc cga aac cag cag 153

Tyr Asp Glu Asp Ser His Trp Trp Ile Gln Tyr Leu Arg Asn Gln Gln

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25

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35

tcc acc tac tac gac ccc tat gac cct tac ccc tat gag ccc tct gag 201

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45

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cct tac ccc tat gga gtg gaa gaa ggc cca gcc tat gcc tat ggt gca 249

Pro Tyr Pro Tyr Gly Val Glu Glu Gly Pro Ala Tyr Ala Tyr Gly Ala

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cca cct cca cca gag ccc cgt gat tgt ccc caa gaa tgc gac tgt ccc 297

Pro Pro Pro Pro Glu Pro Arg Asp Cys Pro Gln Glu Cys Asp Cys Pro

70

75

80

ccc aac ttc ccc aca gcc atg tac tgt gac aac cgc aac ctc aag tac 345

Pro Asn Phe Pro Thr Ala Met Tyr Cys Asp Asn Arg Asn Leu Lys Tyr

85

90

95

2201/2644

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<211> 376

<212> PRT

<213> Mus musculus

<400> 892

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 Asn Gln Gln Ser Thr Tyr Tyr Asp Pro Tyr Asp Pro Tyr Pro Tyr Glu
 35 40 45
 Pro Ser Glu Pro Tyr Pro Tyr Gly Val Glu Glu Gly Pro Ala Tyr Ala
 50 55 60
 Tyr Gly Ala Pro Pro Pro Pro Glu Pro Arg Asp Cys Pro Gln Glu Cys
 65 70 75 80
 Asp Cys Pro Pro Asn Phe Pro Thr Ala Met Tyr Cys Asp Asn Arg Asn
 85 90 95
 Leu Lys Tyr Leu Pro Phe Val Pro Ser Arg Met Lys Tyr Val Tyr Phe
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 Gln Asn Asn Gln Ile Ser Ala Ile Gln Glu Gly Val Phe Asp Asn Ala
 115 120 125
 Thr Gly Leu Leu Trp Val Ala Leu His Gly Asn Gln Ile Thr Ser Asp
 130 135 140
 Lys Val Gly Arg Lys Val Phe Ser Lys Leu Arg His Leu Glu Arg Leu
 145 150 155 160
 Tyr Leu Asp His Asn Asn Leu Thr Arg Met Pro Gly Pro Leu Pro Arg
 165 170 175
 Ser Leu Arg Glu Leu His Leu Asp His Asn Gln Ile Ser Arg Val Pro
 180 185 190

Asn Asn Ala Leu Glu Gly Leu Glu Asn Leu Thr Ala Leu Tyr Leu His
 195 200 205
 His Asn Glu Ile Gln Glu Val Gly Ser Ser Met Arg Gly Leu Arg Ser
 210 215 220
 Leu Ile Leu Leu Asp Leu Ser Tyr Asn His Leu Arg Arg Val Pro Asp
 225 230 235 240
 Gly Leu Pro Ser Ala Leu Glu Gln Leu Tyr Leu Glu His Asn Asn Val
 245 250 255
 Tyr Thr Val Pro Asp Ser Tyr Phe Arg Gly Ser Pro Lys Leu Leu Tyr
 260 265 270
 Val Arg Leu Ser His Asn Ser Leu Thr Asn Asn Gly Leu Ala Thr Asn
 275 280 285
 Thr Phe Asn Ser Ser Ser Leu Leu Glu Leu Asp Leu Ser Tyr Asn Gln
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 Leu Gln Lys Ile Pro Pro Val Asn Thr Asn Leu Glu Asn Leu Tyr Leu
 305 310 315 320
 Gln Gly Asn Arg Ile Asn Glu Phe Ser Ile Ser Ser Phe Cys Thr Val
 325 330 335
 Val Asp Val Met Asn Phe Ser Lys Leu Gln Val Leu Arg Leu Asp Gly
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<210> 893

<211> 2821

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (21).. (1310)

<400> 893

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Lys Ile His Asn Arg Tyr Glu Gly Lys Asp Val Ser Lys His Lys Arg

15

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25

aat ctg gcc ata gca ggc ggt gtc acc ctg tct gta atc gtg tct ccg 149

Asn Leu Ala Ile Ala Gly Gly Val Thr Leu Ser Val Ile Val Ser Pro

30

35

40

gtg gta gct gca gtg act gta ggc att ggt gtt ccc atc atg cta gct 197

Val Val Ala Ala Val Thr Val Gly Ile Gly Val Pro Ile Met Leu Ala

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50

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Tyr Val Tyr Gly Val Val Pro Ile Ser Leu Cys Arg Ser Gly Gly Cys

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70

75

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Gly Val Ser Ala Gly Asn Gly Lys Gly Val Arg Ile Glu Phe Asp Asp

80

85

90

gag aat gac ata aac gtc ggt ggg act aac gca gcc ata gat aca aca 341

Glu Asn Asp Ile Asn Val Gly Gly Thr Asn Ala Ala Ile Asp Thr Thr

95

100

105

tca gta gca gaa gca agg cac aac cct agc ata gga gag gga agt gtc 389

Ser Val Ala Glu Ala Arg His Asn Pro Ser Ile Gly Glu Gly Ser Val

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125	130	135	
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Ile Gly Thr Ile Arg Asp Asn Leu Ser Glu Thr Ala Ser Thr Met Ala			
140	145	150	155
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160	165	170	
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Asn Cys Phe Asn Arg Leu Glu Val Gln Ala Asp Val Gln Lys Glu Arg			
175	180	185	
tgt agt ctc agt gga gag tct ggc aca gtg agc ttg gga aca gtt agt	629		
Cys Ser Leu Ser Gly Glu Ser Gly Thr Val Ser Leu Gly Thr Val Ser			
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gat aac gcc agc acc aaa gca atg gcg gga tcc att ctc aac tcc tac	677		
Asp Asn Ala Ser Thr Lys Ala Met Ala Gly Ser Ile Leu Asn Ser Tyr			
205	210	215	
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Ile Pro Leu Asp Arg Glu Gly Asn Ser Met Glu Val Gln Val Asp Ile			
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 415 420 425

ttt tgg tga tgcactgaga gagacaaata ataaccactc gcaccagaca 1350

Phe Trp

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<210> 894

<211> 429

<212> PRT

<213> Mus musculus

<400> 894

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 Tyr Glu Gly Lys Asp Val Ser Lys His Lys Arg Asn Leu Ala Ile Ala
 20 25 30
 Gly Gly Val Thr Leu Ser Val Ile Val Ser Pro Val Val Ala Ala Val
 35 40 45
 Thr Val Gly Ile Gly Val Pro Ile Met Leu Ala Tyr Val Tyr Gly Val
 50 55 60
 Val Pro Ile Ser Leu Cys Arg Ser Gly Gly Cys Gly Val Ser Ala Gly
 65 70 75 80
 Asn Gly Lys Gly Val Arg Ile Glu Phe Asp Asp Glu Asn Asp Ile Asn
 85 90 95
 Val Gly Gly Thr Asn Ala Ala Ile Asp Thr Thr Ser Val Ala Glu Ala
 100 105 110
 Arg His Asn Pro Ser Ile Gly Glu Gly Ser Val Gly Gly Leu Thr Gly
 115 120 125
 Ser Leu Ser Ala Ser Gly Ser His Met Asp Arg Ile Gly Thr Ile Arg
 130 135 140
 Asp Asn Leu Ser Glu Thr Ala Ser Thr Met Ala Leu Ala Gly Ala Ser
 145 150 155 160
 Ile Thr Gly Ser Leu Ser Gly Ser Ala Met Val Asn Cys Phe Asn Arg
 165 170 175
 Leu Glu Val Gln Ala Asp Val Gln Lys Glu Arg Cys Ser Leu Ser Gly

180	185	190
Glu Ser Gly Thr Val Ser Leu Gly Thr Val Ser Asp Asn Ala Ser Thr		
195	200	205
Lys Ala Met Ala Gly Ser Ile Leu Asn Ser Tyr Ile Pro Leu Asp Arg		
210	215	220
Glu Gly Asn Ser Met Glu Val Gln Val Asp Ile Glu Ser Lys Pro Phe		
225	230	235
Lys Phe Arg His Asn Ser Gly Ser Ser Ser Val Asp Asp Ser Gly Ala		
245	250	255
Thr Arg Gly His Thr Gly Gly Ala Ser Ser Gly Leu Pro Glu Gly Lys		
260	265	270
Ser Ser Ala Thr Lys Trp Ser Lys Glu Ala Thr Gly Gly Lys Lys Ser		
275	280	285
Lys Ser Gly Lys Leu Arg Lys Lys Gly Asn Met Lys Ile Asn Glu Thr		
290	295	300
Arg Glu Asp Met Asp Ala Gln Leu Leu Glu Gln Gln Ser Thr Asn Ser		
305	310	315
Ser Glu Phe Glu Ala Pro Ser Leu Ser Asp Ser Met Pro Ser Val Ala		
325	330	335
Asp Ser His Ser Ser His Phe Ser Glu Phe Ser Cys Ser Asp Leu Glu		
340	345	350
Ser Met Arg Thr Ser Cys Ser His Gly Ser Ser Asp Cys His Ala Arg		
355	360	365
Phe Thr Ala Val Asn Thr Leu Pro Glu Val Glu Asn Asp Arg Leu Glu		
370	375	380
Asn Ser Pro His Gln Cys Ser Ser Ser Ala Phe Gln Ser Cys Phe Leu		
385	390	395
Phe Arg Cys Pro Thr Ala Gln Pro Cys Cys Arg Arg Ala Trp His Gln		
405	410	415

Gln Lys Trp Gly Glu Ala Tyr Gly Gly Phe Val Phe Trp

420

425

<210> 895

<211> 2119

<212> DNA

<213> Mus musculus

<400> 895

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ggaagaacag tgattattga acagagttgg ggaagtccca aagtaacaaa agatgggggtc 180
actgttgcaa agtcaattga tttaaaggat aaatacaaaa atatcggagc taagcttggtt 240
caggatgttg ccaataacac aaatgaagag gctggggatg gcaccaccac tgccactgtt 300
ctggcacggt ctattgccaa ggagggcctt gagaagatca gcaaaggggc taatccagt 360
gaaatccgga gaggtgtgat gtggcgtgt gatgctgtaa ttgctgaact taagaaacag 420
tctaaacctg tgacaacccc tgaagaaatt gctcaggttg ctacaatttc tgcaaacgga 480
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atcacagtga aggatggaaa aaccctgaat gatgagctag aaattattga aggcattgaag 600
tttgatagag gatattttc cccatatttt attaacacat caaaagggtc aaaatgtgaa 660
ttccaagatg cctatgtttt gttagatgaa aagaaatttt ccagtgttca gtccattgtc 720
cctgctcttg aaattgctaa tgctcatcgg aagccattgg tcataatcgc cgaagatgtt 780
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gctactgggtg gtgcggtgtt tggagaagag ggtttgaatc taaatcttga agatgttcaa 960
gctcatgatt tagggaaagt tggagagggtc atcgtcacca aagatgatgc catgcttttg 1020
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gatggagtag ctgtgttgaa ggttggagga acaagtgatg ttgaagtga tgagaagaaa 1200

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 gaagaccaga aaataggtat agaaattatt aaaagagcac ttaaaattcc tgcaatgacg 1380
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 tgagtcatca ggactgtagc gctgtgtcaa caaacatag agagttcaga agacagcctt 2040
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 ctttgtgtaa taaaatttt 2119

<210> 896

<211> 349

<212> DNA

<213> Mus musculus

<400> 896

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 caagcgctct gacggggagg aagtggactt cgccggctgc tgtgcagaac cctgaggctg 180
 aagcagccca gcacaccac gcggactgca gtgtgacagc agcgccacag tctgtgtcct 240
 tgtccctgtc ggcacagtgg ccgtgcctc tggggacagt gatgtgttt gttgtggcag 300
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<210> 897

<211> 1284

<212> DNA

<213> *Mus musculus*

<220>

<221> CDS

<222> (181).. (957)

<400> 897

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ttccggccag ctgttaacac ctgtgtttcc ttttttcaga tcttacaggt gaacaagggtg 180
atg tcc atc ttg ttt tat gtg ata ttt ctt gct tat ctc cgt ggc atc 228
Met Ser Ile Leu Phe Tyr Val Ile Phe Leu Ala Tyr Leu Arg Gly Ile
      1             5             10             15
caa ggc aac agc atg gat caa agg agt ttg ccg gaa gac tct ctc aat 276
Gln Gly Asn Ser Met Asp Gln Arg Ser Leu Pro Glu Asp Ser Leu Asn
              20             25             30
tcc ctc atc atc aag ctg atc cag gcg gat atc ttg aaa aac aag ctt 324
Ser Leu Ile Ile Lys Leu Ile Gln Ala Asp Ile Leu Lys Asn Lys Leu
              35             40             45
tcc aaa cag atg gtg gat gtt aag gaa aat tac cag agc acc ctg ccc 372
Ser Lys Gln Met Val Asp Val Lys Glu Asn Tyr Gln Ser Thr Leu Pro
              50             55             60
aaa gca gag gca ccc agg gaa cca gag cag gga gag gcc acc agg tca 420
Lys Ala Glu Ala Pro Arg Glu Pro Glu Gln Gly Glu Ala Thr Arg Ser
      65             70             75             80

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gag ttc cag cca atg att gca acg gac aca gag cta cta cgg caa cag 468
 Glu Phe Gln Pro Met Ile Ala Thr Asp Thr Glu Leu Leu Arg Gln Gln
 85 90 95
 aga cgc tac aat tcg ccc cgg gtc ctg ctg agt gac agc acc cct ttg 516
 Arg Arg Tyr Asn Ser Pro Arg Val Leu Leu Ser Asp Ser Thr Pro Leu
 100 105 110
 gag ccc cct ccc tta tac cta atg gag gat tat gtg ggc aac ccg gtg 564
 Glu Pro Pro Pro Leu Tyr Leu Met Glu Asp Tyr Val Gly Asn Pro Val
 115 120 125
 gta gcc aat aga acc tca cca cgg agg aaa cgc tat gca gaa cat aag 612
 Val Ala Asn Arg Thr Ser Pro Arg Arg Lys Arg Tyr Ala Glu His Lys
 130 135 140
 agt cac cga gga gag tac tca gtg tgt gac agt gag agc ctg tgg gtg 660
 Ser His Arg Gly Glu Tyr Ser Val Cys Asp Ser Glu Ser Leu Trp Val
 145 150 155 160
 acc gac aag tcc tca gcc att gac att cgg gga cac cag gtc aca gtg 708
 Thr Asp Lys Ser Ser Ala Ile Asp Ile Arg Gly His Gln Val Thr Val
 165 170 175
 ctg ggg gag atc aaa acc ggt aac tct cct gtg aaa caa tat ttt tat 756
 Leu Gly Glu Ile Lys Thr Gly Asn Ser Pro Val Lys Gln Tyr Phe Tyr
 180 185 190
 gaa acg aga tgt aaa gaa gcc agg ccg gtc aaa aac ggt tgc agg ggg 804
 Glu Thr Arg Cys Lys Glu Ala Arg Pro Val Lys Asn Gly Cys Arg Gly
 195 200 205
 att gat gac aaa cac tgg aac tct cag tgc aaa act tcg caa acc tat 852
 Ile Asp Asp Lys His Trp Asn Ser Gln Cys Lys Thr Ser Gln Thr Tyr
 210 215 220
 gtc cga gca ctg act tca gaa aac aac aaa ctc gta ggc tgg cgc tgg 900
 Val Arg Ala Leu Thr Ser Glu Asn Asn Lys Leu Val Gly Trp Arg Trp

225 230 235 240
 ata cga ata gac act tcc tgt gtg tgt gcc ttg tcg aga aaa att gga 948
 Ile Arg Ile Asp Thr Ser Cys Val Cys Ala Leu Ser Arg Lys Ile Gly
 245 250 255
 aga aca tga attggcatct gtccccacat ataaattatt acitttaaatt 997
 Arg Thr
 atatgatatg catgtagcat ataaatgttt atattgtttt tatatattat aagttgacct 1057
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<210> 898

<211> 258

<212> PRT

<213> Mus musculus

<400> 898

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 20 25 30
 Ser Leu Ile Ile Lys Leu Ile Gln Ala Asp Ile Leu Lys Asn Lys Leu
 35 40 45
 Ser Lys Gln Met Val Asp Val Lys Glu Asn Tyr Gln Ser Thr Leu Pro
 50 55 60
 Lys Ala Glu Ala Pro Arg Glu Pro Glu Gln Gly Glu Ala Thr Arg Ser
 65 70 75 80
 Glu Phe Gln Pro Met Ile Ala Thr Asp Thr Glu Leu Leu Arg Gln Gln

	85	90	95
Arg Arg Tyr Asn Ser Pro Arg Val Leu Leu Ser Asp Ser Thr Pro Leu			
100	105	110	
Glu Pro Pro Pro Leu Tyr Leu Met Glu Asp Tyr Val Gly Asn Pro Val			
115	120	125	
Val Ala Asn Arg Thr Ser Pro Arg Arg Lys Arg Tyr Ala Glu His Lys			
130	135	140	
Ser His Arg Gly Glu Tyr Ser Val Cys Asp Ser Glu Ser Leu Trp Val			
145	150	155	160
Thr Asp Lys Ser Ser Ala Ile Asp Ile Arg Gly His Gln Val Thr Val			
165	170	175	
Leu Gly Glu Ile Lys Thr Gly Asn Ser Pro Val Lys Gln Tyr Phe Tyr			
180	185	190	
Glu Thr Arg Cys Lys Glu Ala Arg Pro Val Lys Asn Gly Cys Arg Gly			
195	200	205	
Ile Asp Asp Lys His Trp Asn Ser Gln Cys Lys Thr Ser Gln Thr Tyr			
210	215	220	
Val Arg Ala Leu Thr Ser Glu Asn Asn Lys Leu Val Gly Trp Arg Trp			
225	230	235	240
Ile Arg Ile Asp Thr Ser Cys Val Cys Ala Leu Ser Arg Lys Ile Gly			
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Arg Thr			

<210> 899

<211> 2325

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (286)... (2160)

<400> 899

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 cccacagcag cagagggagg tccagatgaa cccatcactg tggctcacat cgtggtggag 180
 gccacctctc tagcagaaga catcagccac gctcctgacc ttgctggaag tgggcacatc 240
 aaagaggtcg ttgtggctgc tgaggcagag ccaggggatg gcgag atg gca gag gct 297

Met Ala Glu Ala

1

cca ggc agt cct aat cat cag gaa ctt ggg ctt ctt ggg gag ggc gag 345
 Pro Gly Ser Pro Asn His Gln Glu Leu Gly Leu Leu Gly Glu Gly Glu
 5 10 15 20
 cag gcc cat gtc aag ctg ctg gtg aac aag gaa ggc cgc tac gtg tgc 393
 Gln Ala His Val Lys Leu Leu Val Asn Lys Glu Gly Arg Tyr Val Cys
 25 30 35
 atg cta tgt cac aag acc ttc aaa acg ggc agc atc ctc aag gcc cac 441
 Met Leu Cys His Lys Thr Phe Lys Thr Gly Ser Ile Leu Lys Ala His
 40 45 50
 atg gta acg cac agc agc cgc aag gac cac gag tgc aag ctc tgt ggg 489
 Met Val Thr His Ser Ser Arg Lys Asp His Glu Cys Lys Leu Cys Gly
 55 60 65
 gcc tct ttt cgg acc aag ggc tct ctc atc cgg cac cac cga cgg cac 537
 Ala Ser Phe Arg Thr Lys Gly Ser Leu Ile Arg His His Arg Arg His
 70 75 80
 act gat gag cgc ccc tac aaa tgt gcc aag tgt gga aag agt ttc cga 585
 Thr Asp Glu Arg Pro Tyr Lys Cys Ala Lys Cys Gly Lys Ser Phe Arg
 85 90 95 100

gag tca ggc gca ctg act cgg cac ctc aaa tct ctc act cca tgc aca	633
Glu Ser Gly Ala Leu Thr Arg His Leu Lys Ser Leu Thr Pro Cys Thr	
105 110 115	
gaa aag atc cgc ttc agc ata agc aag gac aca gct gtg ggc aaa gag	681
Glu Lys Ile Arg Phe Ser Ile Ser Lys Asp Thr Ala Val Gly Lys Glu	
120 125 130	
gaa gtg cct gca ggg tcc agt gcc tcc act gtg ggg acg gtg aca tca	729
Glu Val Pro Ala Gly Ser Ser Ala Ser Thr Val Gly Thr Val Thr Ser	
135 140 145	
tca gtg gca gga gac ccc atg gag aca tca cct gtg att cac ctg gtg	777
Ser Val Ala Gly Asp Pro Met Glu Thr Ser Pro Val Ile His Leu Val	
150 155 160	
aca gat gcc aag ggt act gtc atc cat gaa gtc cac gtc cag atg cag	825
Thr Asp Ala Lys Gly Thr Val Ile His Glu Val His Val Gln Met Gln	
165 170 175 180	
gag ctt ccc ctg ggc atg aaa gcc ctg acc cca gag tcc cca gac tcg	873
Glu Leu Pro Leu Gly Met Lys Ala Leu Thr Pro Glu Ser Pro Asp Ser	
185 190 195	
gag gag ctc ccc tgt tcc agt gag aac agc cgt gag aac ctg cta cat	921
Glu Glu Leu Pro Cys Ser Ser Glu Asn Ser Arg Glu Asn Leu Leu His	
200 205 210	
cag gcc atg cag aat tct ggc atc gtc ctt gag agg gtt gct gga gag	969
Gln Ala Met Gln Asn Ser Gly Ile Val Leu Glu Arg Val Ala Gly Glu	
215 220 225	
gag agt gct ctg gag cca gcc cct ccc tct ggg tcc agt ccc cag tgc	1017
Glu Ser Ala Leu Glu Pro Ala Pro Pro Ser Gly Ser Ser Pro Gln Cys	
230 235 240	
ctg gga gat gga tcc cct gaa ctg cct ctg ctg aag gtg gag cag ata	1065
Leu Gly Asp Gly Ser Pro Glu Leu Pro Leu Leu Lys Val Glu Gln Ile	

245	250	255	260	
gag aca cag gtg gcc agt gag gcc gcc acc gtg ccc agg acc cac ccg				1113
Glu Thr Gln Val Ala Ser Glu Ala Ala Thr Val Pro Arg Thr His Pro				
	265	270	275	
tgc cct cag tgc agt gag act ttc cca aca gca gcc acg ctg gag gcc				1161
Cys Pro Gln Cys Ser Glu Thr Phe Pro Thr Ala Ala Thr Leu Glu Ala				
	280	285	290	
cac aag aga ggt cac ata gcg ccg agg ccg ttc acc tgc aca cag tgt				1209
His Lys Arg Gly His Ile Ala Pro Arg Pro Phe Thr Cys Thr Gln Cys				
	295	300	305	
ggc aag gcc ttc ccc aaa gcc tac ctg ctc aag aac gac cag gag gtg				1257
Gly Lys Ala Phe Pro Lys Ala Tyr Leu Leu Lys Asn Asp Gln Glu Val				
	310	315	320	
cac gtg cac gag cgc cgc ttc cgt tgt gga gac tgt ggg aag ctt tac				1305
His Val His Glu Arg Arg Phe Arg Cys Gly Asp Cys Gly Lys Leu Tyr				
	325	330	335	340
aag acc atc gct cat gtg cgg gcc cac cgg cgt gtt cac tca gac gag				1353
Lys Thr Ile Ala His Val Arg Gly His Arg Arg Val His Ser Asp Glu				
	345	350	355	
agg cct ttc cct tgt ccc cag tgc gcc aag cgt tac aaa acc aag aat				1401
Arg Pro Phe Pro Cys Pro Gln Cys Gly Lys Arg Tyr Lys Thr Lys Asn				
	360	365	370	
gcc cag caa gta cac ttc cgg aca cac ctg gaa gaa aag ccc cac gtg				1449
Ala Gln Gln Val His Phe Arg Thr His Leu Glu Glu Lys Pro His Val				
	375	380	385	
tgc cag ttc tgc agc cga gcc ttc cgg gag aag gcc tct ctg gtg cgg				1497
Cys Gln Phe Cys Ser Arg Gly Phe Arg Glu Lys Gly Ser Leu Val Arg				
	390	395	400	
cat gtg agg cac cac aca gcc gag aaa cct ttc aag tgc tac aag tgt				1545

His Val Arg His His Thr Gly Glu Lys Pro Phe Lys Cys Tyr Lys Cys
 405 410 415 420
 ggc cgt ggc ttc gcg gac gat ggc aca ctc aac cgg cac ctg cgc act 1593
 Gly Arg Gly Phe Ala Asp Asp Gly Thr Leu Asn Arg His Leu Arg Thr
 425 430 435
 aaa ggg ggc tgc ctg cta gaa gtg gag gag ttg ctg gtg tct gag gag 1641
 Lys Gly Gly Cys Leu Leu Glu Val Glu Glu Leu Leu Val Ser Glu Glu
 440 445 450
 agc cct tct gcg gct gcc act gtg ctt gca gaa gac ccc cac acc gtg 1689
 Ser Pro Ser Ala Ala Ala Thr Val Leu Ala Glu Asp Pro His Thr Val
 455 460 465
 ctg gtg cag ttc tcg tct gtg gta gct gat acc caa gag tac att att 1737
 Leu Val Gln Phe Ser Ser Val Val Ala Asp Thr Gln Glu Tyr Ile Ile
 470 475 480
 gag gcc act gca gat gac aca gag acc agt gaa gcc acc gag atc att 1785
 Glu Ala Thr Ala Asp Asp Thr Glu Thr Ser Glu Ala Thr Glu Ile Ile
 485 490 495 500
 gag ggc acg cag aca gag gtg gac agt cac atc atg aag gtg gtc cag 1833
 Glu Gly Thr Gln Thr Glu Val Asp Ser His Ile Met Lys Val Val Gln
 505 510 515
 cag atc gtg cac cag gct ggt gct ggg cac cag atc atc gtg cag aat 1881
 Gln Ile Val His Gln Ala Gly Ala Gly His Gln Ile Ile Val Gln Asn
 520 525 530
 gtc acc atg gac cag gag aca gca ctg ggt tcg gag gca gct gct gca 1929
 Val Thr Met Asp Gln Glu Thr Ala Leu Gly Ser Glu Ala Ala Ala Ala
 535 540 545
 gac acg atc acc att gcc act cct gag agt ctt act gag cag gtg gcc 1977
 Asp Thr Ile Thr Ile Ala Thr Pro Glu Ser Leu Thr Glu Gln Val Ala
 550 555 560

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Met Thr Leu Ala Ser Ala Ile Ser Glu Gly Thr Val Leu Thr Ala Arg
565          570          575          580
gca ggt cca aac agt act gaa cag gcc act gtg aca atg gtg tca tca 2073
Ala Gly Pro Asn Ser Thr Glu Gln Ala Thr Val Thr Met Val Ser Ser
          585          590          595
gag gac ata gag atc ctt gag cac gga gga gag ctg gtc att gct tca 2121
Glu Asp Ile Glu Ile Leu Glu His Gly Gly Glu Leu Val Ile Ala Ser
          600          605          610
cca gag ggc cag ctt gag gta cag acg gtc atc gta tag tttgagggcc 2170
Pro Glu Gly Gln Leu Glu Val Gln Thr Val Ile Val
          615          620          625
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<210> 900

<211> 624

<212> PRT

<213> Mus musculus

<400> 900

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          20              25              30
Arg Tyr Val Cys Met Leu Cys His Lys Thr Phe Lys Thr Gly Ser Ile
          35              40              45
Leu Lys Ala His Met Val Thr His Ser Ser Arg Lys Asp His Glu Cys

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Lys Leu Cys Gly Ala Ser Phe Arg Thr Lys Gly Ser Leu Ile Arg His			
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His Arg Arg His Thr Asp Glu Arg Pro Tyr Lys Cys Ala Lys Cys Gly			
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Lys Ser Phe Arg Glu Ser Gly Ala Leu Thr Arg His Leu Lys Ser Leu			
	100	105	110
Thr Pro Cys Thr Glu Lys Ile Arg Phe Ser Ile Ser Lys Asp Thr Ala			
	115	120	125
Val Gly Lys Glu Glu Val Pro Ala Gly Ser Ser Ala Ser Thr Val Gly			
	130	135	140
Thr Val Thr Ser Ser Val Ala Gly Asp Pro Met Glu Thr Ser Pro Val			
145	150	155	160
Ile His Leu Val Thr Asp Ala Lys Gly Thr Val Ile His Glu Val His			
	165	170	175
Val Gln Met Gln Glu Leu Pro Leu Gly Met Lys Ala Leu Thr Pro Glu			
	180	185	190
Ser Pro Asp Ser Glu Glu Leu Pro Cys Ser Ser Glu Asn Ser Arg Glu			
	195	200	205
Asn Leu Leu His Gln Ala Met Gln Asn Ser Gly Ile Val Leu Glu Arg			
	210	215	220
Val Ala Gly Glu Glu Ser Ala Leu Glu Pro Ala Pro Pro Ser Gly Ser			
225	230	235	240
Ser Pro Gln Cys Leu Gly Asp Gly Ser Pro Glu Leu Pro Leu Leu Lys			
	245	250	255
Val Glu Gln Ile Glu Thr Gln Val Ala Ser Glu Ala Ala Thr Val Pro			
	260	265	270
Arg Thr His Pro Cys Pro Gln Cys Ser Glu Thr Phe Pro Thr Ala Ala			
	275	280	285